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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	Jun 03	New e-mail delivery for search results now available
NEWS 4	Aug 08	PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 5	Aug 19	Aquatic Toxicity Information Retrieval (AQUIRE) now available on STN
NEWS 6	Aug 26	Sequence searching in REGISTRY enhanced
NEWS 7	Sep 03	JAPIO has been reloaded and enhanced
NEWS 8	Sep 16	Experimental properties added to the REGISTRY file
NEWS 9	Sep 16	CA Section Thesaurus available in CAPLUS and CA
NEWS 10	Oct 01	CASREACT Enriched with Reactions from 1907 to 1985
NEWS 11	Oct 24	BEILSTEIN adds new search fields
NEWS 12	Oct 24	Nutraceuticals International (NUTRACEUT) now available on STN
NEWS 13	Nov 18	DKILIT has been renamed APOLLIT
NEWS 14	Nov 25	More calculated properties added to REGISTRY
NEWS 15	Dec 04	CSA files on STN
NEWS 16	Dec 17	PCTFULL now covers WP/PCT Applications from 1978 to date
NEWS 17	Dec 17	TOXCENTER enhanced with additional content
NEWS 18	Dec 17	Adis Clinical Trials Insight now available on STN
NEWS 19	Jan 29	Simultaneous left and right truncation added to COMPENDEX, ENERGY, INSPEC
NEWS 20	Feb 13	CANCERLIT is no longer being updated
NEWS 21	Feb 24	METADEX enhancements
NEWS 22	Feb 24	PCTGEN now available on STN
NEWS 23	Feb 24	TEMA now available on STN
NEWS 24	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS 25	Feb 26	PCTFULL now contains images
NEWS 26	Mar 04	SDI PACKAGE for monthly delivery of multifile SDI results
NEWS 27	Mar 20	EVENTLINE will be removed from STN
NEWS 28	Mar 24	PATDPAFULL now available on STN
NEWS 29	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS 30	Apr 11	Display formats in DGENE enhanced
NEWS 31	Apr 14	MEDLINE Reload
NEWS 32	Apr 17	Polymer searching in REGISTRY enhanced
NEWS 33	Apr 21	Indexing from 1947 to 1956 being added to records in CA/CAPLUS
NEWS 34	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS 35	Apr 28	RDISCLOSURE now available on STN
NEWS 36	May 05	Pharmacokinetic information and systematic chemical names added to PHAR
NEWS 37	May 15	MEDLINE file segment of TOXCENTER reloaded
NEWS 38	May 15	Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS 39	May 16	CHEMREACT will be removed from STN
NEWS 40	May 19	Simultaneous left and right truncation added to WSCA
NEWS 41	May 19	RAPRA enhanced with new search field, simultaneous left and right truncation
NEWS 42	Jun 06	Simultaneous left and right truncation added to CBNB

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 NEWS 43  Jun 06  PASCAL enhanced with additional data

 NEWS EXPRESS  April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT
               MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
               AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS INTER    General Internet Information
 NEWS LOGIN    Welcome Banner and News Items
 NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
 NEWS WWW      CAS World Wide Web Site (general information)

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  * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 13:38:43 ON 11 JUN 2003

=> file ca, biosis, medline
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

FILE 'CA' ENTERED AT 13:39:01 ON 11 JUN 2003
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FILE 'BIOSIS' ENTERED AT 13:39:01 ON 11 JUN 2003
COPYRIGHT (C) 2003 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'MEDLINE' ENTERED AT 13:39:01 ON 11 JUN 2003

=> s galactanase?
L1          456 GALACTANASE?

=> s glucose oxidase?
L2        18230 GLUCOSE OXIDASE?

=> s l1 and l2
L3            4 L1 AND L2

=> d 1-4 ab,bib

L3   ANSWER 1 OF 4  CA  COPYRIGHT 2003 ACS
AB   Methods for producing consumable products from potatoes comprise: (a)
     treating potato with one or more exogenous enzymes selected from the group
     consisting of an amyloglucosidase, glucose oxidase,
     laccase, lipase, maltogenic amylase, pectinase, pentosanase, protease, and
     transglutaminase, and (b) processing the enzyme-treated potato to produce
     a potato product.  Thus, the crispiness of french fries is enhanced by
     soaking the blanched potato (before frying) in NovoShape (pectin
     methylesterase) for 1 h at 25.degree..
AN   135:303137  CA
TI   Potato products produced by using enzyme pretreatments
IN   Xu, Feng; Kofod, Lene Venke; Olsen, Hans Sejr
PA   Novo Nordisk Biotech, Inc., USA; Novozymes A/S
SO   PCT Int. Appl., 25 pp.
```

CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001078524	A2	20011025	WO 2001-US12259	20010413
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1276389	A2	20030122	EP 2001-928545	20010413
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI DK 2000-623	A	20000414		
US 2000-704395	A	20001101		
WO 2001-US12259	W	20010413		

L3 ANSWER 2 OF 4 CA COPYRIGHT 2003 ACS
AB The present invention relates to a method of generating a gene library from an environmental pool of organisms, which gene library is enriched in DNA encoding a polypeptide with an activity of interest. Also, the invention provides a method of selecting a DNA sequence of interest from an environmental pool of organisms. Further, the invention relates to a gene library prepd. from an enriched environmental pool of organisms enriched in DNA encoding a polypeptide with an activity of interest. The sample is enriched for microorganisms carrying genes of interest by culture in a selective or enrichment medium, e.g. with a specific carbon or nitrogen source. DNA is then extd. from the mixed culture, cloned and screened for genes of interest.
AN 132:304295 CA
TI Generation of genomic libraries enriched in genes of interest from mixed populations of microorganisms
IN Sandal, Thomas; Sjoholm, Carsten; Schaefer, Thomas; Lange, Lene; Duffner, Fiona
PA Novo Nordisk A/s, Den.
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000024882	A1	20000504	WO 1999-DK553	19991014
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2343878	AA	20000504	CA 1999-2343878	19991014
AU 9961886	A1	20000515	AU 1999-61886	19991014
EP 1124948	A1	20010822	EP 1999-948722	19991014
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002528075	T2	20020903	JP 2000-578436	19991014

PRAI DK 1998-1388 A 19981028
WO 1999-DK553 W 19991014
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 4 CA COPYRIGHT 2003 ACS
AB A method for cleaning and disinfecting a surface at least partly covered by a contaminated bacterial biofilm comprises contacting the contaminated bacterial biofilm with a cleaning compn. comprising one or more hydrolases, e.g. a hydrolytic enzyme produced by a strain of the fungus Aspergillus aculeatus, in an amt. effective for either fully or partly removing or releasing the biofilm layer from the surface; and contacting the biofilm with a bactericidal disinfecting compn. comprising an oxidoreductase such as an oxidase, a peroxidase or a laccase, in an amt. effective for killing the living bacterial cells present in the biofilm.
AN 129:79056 CA
TI A method for enzymic treatment of biofilm
IN Johansen, Charlotte
PA Novo Nordisk A/S, Den.
SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9826807	A1	19980625	WO 1997-DK573	19971216
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 6100080	A	20000808	US 1997-990829	19971215
AU 9853102	A1	19980715	AU 1998-53102	19971216
EP 946207	A1	19991006	EP 1997-949991	19971216
EP 946207	B1	20011024		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001508677	T2	20010703	JP 1998-527205	19971216
AT 207367	E	20011115	AT 1997-949991	19971216
ES 2167022	T3	20020501	ES 1997-949991	19971216

PRAI DK 1996-1446 A 19961218
WO 1997-DK573 W 19971216
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 4 CA COPYRIGHT 2003 ACS
AB Affinity chromatog. compns. are prepd. by coupling monomeric or oligomeric substances which are partial substrate and/or competitive inhibitors, or are substrate analogs and/or inhibitors, with epoxide-contg. plastics (e.g. polyethylene, polyamide, etc.). By use of readily available plastics and ligands, a significant savings can be realized for the purifn. of enzymes. Maltase was purified on a maltose-contg. affinity column.
AN 109:225808 CA
TI Isolation of enzymes from aqueous mixtures using affinity chromatography
IN Call, Hans Peter; Emeis, Carl Christian; Mueller-Schulte, Detlef
PA Fed. Rep. Ger.
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent

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LA   German
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
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PI   DE 3613407         A1   19871022       DE 1986-3613407  19860421
     DE 3613407         C2   19920521
     WO 8706596         A2   19871105       WO 1987-EP214    19870421
     WO 8706596         A3   19880407
         W:  AT, AU, CH, DE, DK, FI, GB, JP, KR, LU, NL, NO, SE, SU, US
         RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE
     AU 8775455         A1   19871124       AU 1987-75455    19870421
     EP 282496          A1   19880921       EP 1987-904036   19870421
         R:  AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE
     JP 01500836        T2   19890323       JP 1987-503809   19870421
     DK 8706685         A    19880119       DK 1987-6685     19871218
PRAI DE 1986-3613407         19860421
     WO 1987-EP214           19870421


=> file reg
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    15.74      15.95

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                    -2.48      -2.48

FILE 'REGISTRY' ENTERED AT 13:39:41 ON 11 JUN 2003
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STRUCTURE FILE UPDATES:   10 JUN 2003  HIGHEST RN 528811-66-7
DICTIONARY FILE UPDATES:  10 JUN 2003  HIGHEST RN 528811-66-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> s galactanase/cn
L4            1 GALACTANASE/CN

=> s glucose oxidase
          21103 GLUCOSE
          21232 OXIDASE
L5           30 GLUCOSE OXIDASE
                (GLUCOSE(W)OXIDASE)

=> s glucose oxidase/cn
L6            1 GLUCOSE OXIDASE/CN

=> file ca, biosis, medline
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COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                          ENTRY    SESSION
FULL ESTIMATED COST                                       17.28      33.23

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)              SINCE FILE      TOTAL
                                                          ENTRY    SESSION
CA SUBSCRIBER PRICE                                        0.00      -2.48

FILE 'CA' ENTERED AT 13:40:15 ON 11 JUN 2003
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FILE 'BIOSIS' ENTERED AT 13:40:15 ON 11 JUN 2003
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FILE 'MEDLINE' ENTERED AT 13:40:15 ON 11 JUN 2003

=> s l4
L7          180 L4

=> s l6
L8        11339 L6

=> s l7 and l8
L9            4 L7 AND L8

=> d 1-4 ab,bib

L9   ANSWER 1 OF 4  CA  COPYRIGHT 2003 ACS
AB   Methods for producing consumable products from potatoes comprise: (a)
     treating potato with one or more exogenous enzymes selected from the group
     consisting of an amyloglucosidase, glucose oxidase, laccase, lipase,
     maltogenic amylase, pectinase, pentosanase, protease, and
     transglutaminase, and (b) processing the enzyme-treated potato to produce
     a potato product.  Thus, the crispiness of french fries is enhanced by
     soaking the blanched potato (before frying) in NovoShape (pectin
     methylesterase) for 1 h at 25.degree..
AN   135:303137  CA
TI   Potato products produced by using enzyme pretreatments
IN   Xu, Feng; Kofod, Lene Venke; Olsen, Hans Sejr
PA   Novo Nordisk Biotech, Inc., USA; Novozymes A/S
SO   PCT Int. Appl., 25 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.         KIND  DATE          APPLICATION NO.  DATE
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PI   WO 2001078524      A2    20011025      WO 2001-US12259  20010413
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,
             ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     EP 1276389          A2    20030122      EP 2001-928545   20010413
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRAI DK 2000-623         A     20000414
     US 2000-704395      A     20001101
```

WO 2001-US12259 W 20010413

L9 ANSWER 2 OF 4 CA COPYRIGHT 2003 ACS
AB The present invention relates to a method of generating a gene library from an environmental pool of organisms, which gene library is enriched in DNA encoding a polypeptide with an activity of interest. Also, the invention provides a method of selecting a DNA sequence of interest from an environmental pool of organisms. Further, the invention relates to a gene library prepd. from an enriched environmental pool of organisms enriched in DNA encoding a polypeptide with an activity of interest. The sample is enriched for microorganisms carrying genes of interest by culture in a selective or enrichment medium, e.g. with a specific carbon or nitrogen source. DNA is then extd. from the mixed culture, cloned and screened for genes of interest.
AN 132:304295 CA
TI Generation of genomic libraries enriched in genes of interest from mixed populations of microorganisms
IN Sandal, Thomas; Sjoholm, Carsten; Schaefer, Thomas; Lange, Lene; Duffner, Fiona
PA Novo Nordisk A/s, Den.
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000024882	A1	20000504	WO 1999-DK553	19991014
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2343878	AA	20000504	CA 1999-2343878	19991014
	AU 9961886	A1	20000515	AU 1999-61886	19991014
	EP 1124948	A1	20010822	EP 1999-948722	19991014
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002528075	T2	20020903	JP 2000-578436	19991014
PRAI	DK 1998-1388	A	19981028		
	WO 1999-DK553	W	19991014		

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 4 CA COPYRIGHT 2003 ACS
AB A method for cleaning and disinfecting a surface at least partly covered by a contaminated bacterial biofilm comprises contacting the contaminated bacterial biofilm with a cleaning compn. comprising one or more hydrolases, e.g. a hydrolytic enzyme produced by a strain of the fungus Aspergillus aculeatus, in an amt. effective for either fully or partly removing or releasing the biofilm layer from the surface; and contacting the biofilm with a bactericidal disinfecting compn. comprising an oxidoreductase such as an oxidase, a peroxidase or a laccase, in an amt. effective for killing the living bacterial cells present in the biofilm.
AN 129:79056 CA
TI A method for enzymic treatment of biofilm
IN Johansen, Charlotte
PA Novo Nordisk A/S, Den.
SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9826807	A1	19980625	WO 1997-DK573	19971216
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 6100080	A	20000808	US 1997-990829	19971215
	AU 9853102	A1	19980715	AU 1998-53102	19971216
	EP 946207	A1	19991006	EP 1997-949991	19971216
	EP 946207	B1	20011024		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2001508677	T2	20010703	JP 1998-527205	19971216
	AT 207367	E	20011115	AT 1997-949991	19971216
	ES 2167022	T3	20020501	ES 1997-949991	19971216
PRAI	DK 1996-1446	A	19961218		
	WO 1997-DK573	W	19971216		

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 4 CA COPYRIGHT 2003 ACS
AB Affinity chromatog. compns. are prepd. by coupling monomeric or oligomeric substances which are partial substrate and/or competitive inhibitors, or are substrate analogs and/or inhibitors, with epoxide-contg. plastics (e.g. polyethylene, polyamide, etc.). By use of readily available plastics and ligands, a significant savings can be realized for the purifn. of enzymes. Maltase was purified on a maltose-contg. affinity column.
AN 109:225808 CA
TI Isolation of enzymes from aqueous mixtures using affinity chromatography
IN Call, Hans Peter; Emeis, Carl Christian; Mueller-Schulte, Detlef
PA Fed. Rep. Ger.
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3613407	A1	19871022	DE 1986-3613407	19860421
	DE 3613407	C2	19920521		
	WO 8706596	A2	19871105	WO 1987-EP214	19870421
	WO 8706596	A3	19880407		
	W: AT, AU, CH, DE, DK, FI, GB, JP, KR, LU, NL, NO, SE, SU, US				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	AU 8775455	A1	19871124	AU 1987-75455	19870421
	EP 282496	A1	19880921	EP 1987-904036	19870421
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	JP 01500836	T2	19890323	JP 1987-503809	19870421
	DK 8706685	A	19880119	DK 1987-6685	19871218
PRAI	DE 1986-3613407		19860421		
	WO 1987-EP214		19870421		

Connecting via Winsock to STN

check all of these out!

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NEWS 1		Web Page URLs for STN Seminar Schedule - N. America
NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	Jun 03	New e-mail delivery for search results now available
NEWS 4	Aug 08	PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 5	Aug 19	Aquatic Toxicity Information Retrieval (AQUIRE) now available on STN
NEWS 6	Aug 26	Sequence searching in REGISTRY enhanced
NEWS 7	Sep 03	JAPIO has been reloaded and enhanced
NEWS 8	Sep 16	Experimental properties added to the REGISTRY file
NEWS 9	Sep 16	CA Section Thesaurus available in CAPLUS and CA
NEWS 10	Oct 01	CASREACT Enriched with Reactions from 1907 to 1985
NEWS 11	Oct 24	BEILSTEIN adds new search fields
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NEWS 13	Nov 18	DKILIT has been renamed APOLLIT
NEWS 14	Nov 25	More calculated properties added to REGISTRY
NEWS 15	Dec 04	CSA files on STN
NEWS 16	Dec 17	PCTFULL now covers WP/PCT Applications from 1978 to date
NEWS 17	Dec 17	TOXCENTER enhanced with additional content
NEWS 18	Dec 17	Adis Clinical Trials Insight now available on STN
NEWS 19	Jan 29	Simultaneous left and right truncation added to COMPENDEX, ENERGY, INSPEC
NEWS 20	Feb 13	CANCERLIT is no longer being updated
NEWS 21	Feb 24	METADEX enhancements
NEWS 22	Feb 24	PCTGEN now available on STN
NEWS 23	Feb 24	TEMA now available on STN
NEWS 24	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS 25	Feb 26	PCTFULL now contains images
NEWS 26	Mar 04	SDI PACKAGE for monthly delivery of multifile SDI results
NEWS 27	Mar 20	EVENTLINE will be removed from STN
NEWS 28	Mar 24	PATDPAFULL now available on STN
NEWS 29	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS 30	Apr 11	Display formats in DGENE enhanced
NEWS 31	Apr 14	MEDLINE Reload
NEWS 32	Apr 17	Polymer searching in REGISTRY enhanced
NEWS 33	Apr 21	Indexing from 1947 to 1956 being added to records in CA/CAPLUS
NEWS 34	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS 35	Apr 28	RDISCLOSURE now available on STN
NEWS 36	May 05	Pharmacokinetic information and systematic chemical names added to PHAR
NEWS 37	May 15	MEDLINE file segment of TOXCENTER reloaded
NEWS 38	May 15	Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS 39	May 16	CHEMREACT will be removed from STN
NEWS 40	May 19	Simultaneous left and right truncation added to WSCA
NEWS 41	May 19	RAPRA enhanced with new search field, simultaneous left and right truncation
NEWS 42	Jun 06	Simultaneous left and right truncation added to CBNB

NEWS 43 Jun 06 PASCAL enhanced with additional data

NEWS EXPRESS April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT
MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
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FILE 'HOME' ENTERED AT 14:48:20 ON 11 JUN 2003

=> file ca, biosis, medline

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FULL ESTIMATED COST	0.21	0.21

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FILE 'MEDLINE' ENTERED AT 14:48:41 ON 11 JUN 2003

=> s lactose?
L1 73643 LACTOSE?

=> s galactose oxidase
L2 3406 GALACTOSE OXIDASE

=> s l1 (p) l2
L3 96 L1 (P) L2

=> s lactose
L4 73362 LACTOSE

=> s lactose (p) (galactose oxidase)
L5 96 LACTOSE (P) (GALACTOSE OXIDASE)

=> dup rem l5
PROCESSING COMPLETED FOR L5
L6 64 DUP REM L5 (32 DUPLICATES REMOVED)

=> d 1-64 ab,bib

L6 ANSWER 1 OF 64 CA COPYRIGHT 2003 ACS
AB The chemiluminescent substrate consists of liq. A (a oxidase such as xanthine oxidase, **galactose oxidase**, or glucose oxidase) and liq. B (the substrate for oxidase in liq. A; such as

salicylal, **lactose**, or glucose), and it can produce H2O2 after being added to the horse-radish peroxidase-labeled chemiluminescent immune reactant soln.

AN 137:277768 CA
TI High-stability chemiluminescent substrate and testing method
IN Wang, Jing
PA Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CN 1333464	A	20020130	CN 2001-118410	20010530
PRAI CN 2001-118410		20010530		

L6 ANSWER 2 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 1
AB A quick, simple and economical biostrip technol. was developed for estn. of **lactose** by immobilizing .beta.-galactosidase, **galactose oxidase** and horseradish peroxidase on to a polymeric support. The biostrip is dipped in milk or milk products and, from the color that develops from an added chromogen, the concn. of **lactose** can be estd. from < 20 to 100+g l-1. The biostrips may be used in dairy industries, hospitals and remote areas where expensive instruments are not available.
AN 138:234367 CA
TI A quick and simple biostrip technique for detection of lactose
AU Sharma, Sandeep K.; Sehgal, Neeta; Kumar, Ashok
CS Centre for Biochemical Technology, Delhi University Campus, Delhi, 110007, India
SO Biotechnology Letters (2002), 24(20), 1737-1739
CODEN: BILED3; ISSN: 0141-5492
PB Kluwer Academic Publishers
DT Journal
LA English
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 2
AB A microdialysis-coupled flow injection amperometric sensor (.mu.FIAS) was used to det. glucose, galactose, and **lactose** in milk. The sensor is based on enzyme-catalyzed reaction in combination with the three well-established anal. techniques, namely; microdialysis sampling, flow injection anal. (FIA), and amperometric detection. With the multianalyte sensor it was possible to detect glucose and galactose by sequential injection of their corresponding oxidase enzymes: glucose oxidase and **galactose oxidase**, while **lactose** was detd. by injection of a mixt. of beta-galactosidase and glucose oxidase enzymes. The sensor showed a linear response between 0.05 and 10 mM for glucose, between 0.1 and 20 mM for galactose and between 0.2 and 20 mM for **lactose**, resp. The relative std. deviation values of the sensor measurements for glucose, galactose, and **lactose** were 3-4% (n=3). The sensor measurements for **lactose** content in milk were compared with a std. method with an IR spectrophotometer.
AN 137:168466 CA
TI Detection of glucose, galactose, and lactose in milk with a microdialysis-coupled flow injection amperometric sensor
AU Rajendran, V.; Irudayaraj, J.
CS Department of Agricultural and Biological Engineering, The Pennsylvania State University, University Park, PA, 16802, USA
SO Journal of Dairy Science (2002), 85(6), 1357-1361
CODEN: JDSCAE; ISSN: 0022-0302
PB American Dairy Science Association

DT Journal
LA English
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 64 CA COPYRIGHT 2003 ACS
AB The fungal galactose oxidase (D-galactose) was modified to obtain a glucose 6-oxidase activity. A combinatorial library was constructed by satn. mutagenesis of the Arg330, Phe464, and Gln406 residues of copper contg. radical enzyme galactose oxidase (GOase) mutant A3.E7. Satn. mutagenesis of Trp290 in the parent A3.E7 generated mutant M-W(W290F), with tenfold improved activity towards D-glucose, and introduction of W290F mutation into mutant M-RQ produced the mutant M-RQW, with 100-fold increased activity towards D-glucose compared to A3.E7. Combinatorial mutagenesis of GOase and screening for activity towards glucose has generated an enzyme with a low but significant level of this activity.
AN 137:348262 CA
TI Modification of galactose oxidase to introduce glucose 6-oxidase activity
AU Sun, Lianhong; Bulter, Thomas; Alcalde, Miguel; Petrounia, Ioanna P.; Arnold, Frances H.
CS Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, 91125, USA
SO ChemBioChem (2002), 3(8), 781-783
CODEN: CBCHFX; ISSN: 1439-4227
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 3
AB Preference for the .beta.-anomer of galactose attributed to the bovine heart 14 kDa galectin-1 (BHL-14) was re-examd. using natural glycoproteins and artificially glycosylated proteins as ligands. Endogenous glycoproteins co-purified with BHL-14 during its affinity chromatog. isolation contained oligosaccharides bearing terminal .alpha.-linked galactose (TAG) moieties and were superior even to laminin as ligands for homogeneous BHL-14 obtained by high pressure liq. chromatog. Artificially glycosylated proteins prepd. by covalent attachment of melibiose to proteins and contg. TAG moieties were ligands for BHL-14, unlike their **lactose** counterparts which contained .beta.-linked galactose. Enzymic removal of TAG moieties from the following glycoproteins abolished their recognition by BHL-14: (i) endogenous glycoproteins co-purified with BHL-14; (ii) mouse laminin; and (iii) bovine heart glycoproteins recognized by peanut agglutinin. Modification of TAG in laminin using **galactose oxidase** also rendered the glycoprotein inert towards BHL-14. Desialylation of human IgG, bovine thyroglobulin or laminin failed to increase the affinity of BHL-14 for these glycoproteins. Since removal of TAG or of sialic acid moiety exposed LacNAc (Gal .beta.1.fwdarw.4 GlcNAc) in these glycoproteins, these results indicated that TAG, rather than LacNAc, is a ligand for BHL-14 on N-linked oligosaccharide chains of glycoproteins. Ready recognition of human IgA and jacalin-binding human plasma glycoproteins and non-recognition of human IgG suggested that T antigen (Gal.beta.1.fwdarw.3 GalNAc) may also be ligand for galectin-1.
AN 137:336700 CA
TI Terminal .alpha.-linked galactose rather than N-acetyl lactosamine is ligand for bovine heart galectin-1 in N-linked oligosaccharides of glycoproteins
AU Appukuttan, P. S.
CS Division of Biochemistry, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, 695011, India
SO Journal of Molecular Recognition (2002), 15(4), 180-187
CODEN: JMORE4; ISSN: 0952-3499

PB John Wiley & Sons Ltd.
DT Journal
LA English
RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 64 CA COPYRIGHT 2003 ACS
AB Experience accumulated over a no. of years in developing of methods of immobilization of **galactose oxidase** from Fusarium graminearum on parent and modified silica matrixes is analyzed. Sturdy adsorption of **galactose oxidase** on silica surface was obsd., such heterogeneous specimens possessed by enhanced biocatalyst stability and activity as compared with enzyme solns. Covalent immobilization of **galactose oxidase** was carried out on the amine- contg. silicas activated by 2,4-tolylene diisocyanate and cyanuric chloride. It was also shown that in the presence of the substrate (galactose) enzyme chemisorption takes place on the surface on amine-contg. silica matrixes. Immobilized prepns. were successfully applied for anal. detn. of galactose-contg. carbohydrates (galactose, **lactose**, raffinose) in complex mixts.
AN 138:374561 CA
TI Adsorption and chemisorption of galactose oxidase on silica surface
AU Kondakova, L. V.; Yanishpolskii, V. V.; Tertykh, V. A.
CS Inst. Surface Chem., National Acad. Sci., Kiev, 03680, Ukraine
SO Khimiya, Fizika ta Tekhnologiya Poverkhni (2002), 7-8, 150-157
CODEN: KFTPFK
PB Vidavnichii Dim "KM Akademiya"
DT Journal
LA English
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 7 OF 64 CA COPYRIGHT 2003 ACS
AB This invention relates to the expression of improved polynucleotide and polypeptide sequences encoding for eukaryotic enzymes, particularly galactose oxidase from Fusarium NRRL 2903 (also known as Dactylium dendroides). The enzymes are advantageously produced in conventional or facile expression systems. Various methods for directed evolution of polynucleotide sequences can be used to obtain the improved sequences, including error-prone PCR and DNA shuffling. The improved characteristics of the polypeptides or proteins generated in this manner include improved expression, enhanced activity toward one or more substrates, and increased thermal stability. In a particular embodiment, the invention relates to improved expression of the galactose oxidase (GAO) gene and GAO enzymes. The mutant is a functional and active GAO that is expressed in Escherichia coli at levels of about 65-fold the activity of a parent recombinant wild-type (for D-galactose). He activity for other substrates, such as allyl alc., is also about 65-fold that of wild-type. Mutants are also more thermostable. Enzyme yield is generally at least about 10 mg/L.
AN 136:2261 CA
TI Directed evolution of Fusarium galactose oxidase for improved properties and production
IN Arnold, Frances H.; Petrounia, Ioanna P.; Sun, Lianhong
PA California Institute of Technology, USA
SO PCT Int. Appl., 133 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001088110	A1	20011122	WO 2000-US32345	20001127

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, HR, HU, ID, IL,

IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1290147 A1 20030312 EP 2000-980811 20001127
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI US 2000-571553 A2 20000516
WO 2000-US32345 W 20001127

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 8 OF 64 CA COPYRIGHT 2003 ACS

AB The present invention relates to mutant galactose oxidase genes (mgo's) encoding variant galactose oxidase (vGO's) which are superior to wild type GO in terms of efficiency of oxidizing guar and other compds., as well as in conferring improved thermostability. The invention also relates to constructs and recombinant host cells incorporating the genes and antibodies to the polypeptides. The invention is useful in oxidn. of guar gum, which results in formation of oxidized guar used in paper manufg.

AN 135:206456 CA

TI Increased enzymatic activity or thermostability of variant galactose oxidase and use in oxidation of guar gum in paper manufacturing

IN Maffia, Anthony M., III; Delagrave, Simon; Murphy, Dennis J.; Rittenhouse, Pruss Jennifer; Bylina, Edward; Coleman, William J.

PA Hercules Incorporated, USA

SO PCT Int. Appl., 65 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001062938	A2	20010830	WO 2001-US5732	20010221

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2001051369 A1 20011213 US 2001-782906 20010214
US 6498026 B2 20021224
EP 1259619 A2 20021127 EP 2001-912946 20010221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI US 2000-185001P P 20000225
US 2001-782906 A 20010214
WO 2001-US5732 W 20010221

L6 ANSWER 9 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 4

AB Here we demonstrate that ricin is able to interact with the mol. chaperone calreticulin both in vitro and in vivo. The interaction occurred with ricin holotoxin, but not with free ricin A chain; and it was prevented in the presence of **lactose**, suggesting that it was mediated by the lectin activity of the ricin B chain. This lectin is galactose-specific, and metabolic labeling with [3H]galactose or treating **galactose oxidase**-modified calreticulin with sodium [3H]borohydride indicated that Vero cell calreticulin possesses a terminally

galactosylated oligosaccharide. Brefeldin A treatment indicated that the intracellular interaction occurred initially in a post-Golgi stack compartment, possibly the trans-Golgi network, whereas the reductive sepn. of ricin subunits occurred in an earlier part of the secretory pathway, most probably the endoplasmic reticulum (ER). Intoxicating Vero cells with ricin whose A chain had been modified to include either a tyrosine sulfation site or the sulfation site plus available N-glycosylation sites, in the presence of Na235SO4, confirmed that calreticulin interacted with endocytosed ricin that had already undergone retrograde transport to both the Golgi and the ER. Although we cannot exclude the possibility that the interaction between ricin and calreticulin is an indirect one, the data presented are consistent with the idea that calreticulin may function as a recycling carrier for retrograde transport of ricin from the Golgi to the ER.

AN 134:291383 CA
TI An interaction between ricin and calreticulin that may have implications for toxin trafficking
AU Day, Philip J.; Owens, Susan R.; Wesche, Jorgen; Olsnes, Sjur; Roberts, Lynne M.; Lord, J. Michael
CS Department of Biological Sciences, University of Warwick, Coventry, CV4 7AL, UK
SO Journal of Biological Chemistry (2001), 276(10), 7202-7208
CODEN: JBCHA3; ISSN: 0021-9258
PB American Society for Biochemistry and Molecular Biology
DT Journal
LA English
RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 10 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 5
AB Two types of amperometric biosensors for **lactose** detection based either on co-immobilization of two enzymes (**galactose oxidase** with peroxidase) or co-immobilization of three enzymes (.beta.-galactosidase, **galactose oxidase** and peroxidase) were constructed. A graphite rod with pre-adsorbed ferrocene was used as a working electrode. The use of **galactose oxidase** instead of the frequently used glucose oxidase resulted in the construction of a glucose-non-interfering **lactose** sensor. Co-immobilization of peroxidase with **galactose oxidase** allowed the effect of borate on the extension of the linear range and the effect of the working potential on **galactose oxidase** activation to be studied. The presence of .beta.-galactosidase greatly enhances the sensor's sensitivity, but its linear range is narrower than that of the sensor without .beta.-galactosidase. Addn. of DEAE-dextran and inositol to the enzyme layer improved the half-life more than 16-fold compared with the sensor without stabilizers. A response time between 60 and 75 s (90% of the steady-state value) and a detection limit for **lactose** detn. from 44 to 339 .mu.M (signal-to-noise ratio = 3) were obsd. depending on the conditions. The precision of measurements of std. **lactose** soln. for the trienzymic and bienzymic sensors was 2.19 and 2.02%, resp. The precision of anal. of dairy products varied from 0.24 to 5.24%. Analyses of real samples showed good correlation with HPLC anal.; eight samples and 10 std. **lactose** solns. without pre-treatment were analyzed in 1 h.

AN 133:192175 CA
TI Novel glucose non-interference biosensor for **lactose** detection based on **galactose oxidase**-peroxidase with and without co-immobilised .beta.-galactosidase
AU Tkac, Jan; Sturdik, Ernest; Gemeiner, Peter
CS Dep. Biotechnol., Fac. Chem. Technol., Slovak University of Technology, Bratislava, SK-81237, Slovakia
SO Analyst (Cambridge, United Kingdom) (2000), 125(7), 1285-1289
CODEN: ANALAO; ISSN: 0003-2654
PB Royal Society of Chemistry

DT Journal
LA English
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 11 OF 64 CA COPYRIGHT 2003 ACS
AB An overview is given of the detn. of glucose, **lactose** and galactose in Parmesan cheese (immobilization of glucose oxidase, .beta.-galactosidase, and **galactose oxidase** in a H2O2 amperometric biosensor); detn. of biogenic amines in various cheeses (immobilization of diamine oxidase in an enzyme reactor); detn. of L-lactic acid in Mozzarella curds (lactate oxidase-contg. biosensor and fluid injection anal.); and detn. of lactulose in milk (.beta.-galactosidase- and fructose dehydrogenase-contg. amperometric biosensor). The immunochem. detn. of lactosylated proteins in milk is also considered.
AN 134:177508 CA
TI Electrochemical biosensors for analytical applications in dairy products
AU Palleschi, Giuseppe; Compagnone, Dario; Moscone, Danila; Isoldi, Gina; Pallini, Micaela; Volpe, Giulia; Esti, Marco; Marconi, Emanuele
CS Dipartimento Scienze e Technologie Chimiche, Universita Roma "Tor Vergata"; Via dell Ricerca Scientifica, 00133, Rom.
SO Scienza e Tecnica Lattiero-Casearia (2000), 51(3), 164-180
CODEN: SLCAAF; ISSN: 0390-6361
PB Associazione Italiana Tecnici del Latte
DT Journal
LA Italian
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 12 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 6
AB In home-made sensors coimmobilizing enzymes in thin-layer plexi-cells on natural protein membranes, three enzyme cells: .beta.-galactosidase and **galactose oxidase** (A), .beta.-galactosidase and glucose oxidase (B) and .beta.-galactosidase, **galactose oxidase** , and glucose oxidase (C) were built into a flow-injection-analyzer system. The **lactose** was decompd. and oxidized by the immobilized enzymes and the hydrogen peroxide generated during the enzymic reactions was detd. by amperometric detection. The parameters for biochem. and electrochem. reactions (concn. of buffer, temp., flow rate) were optimized in each enzyme cell. The pH optima of the **lactose** measurement was detd. in the three enzyme cells mentioned above. The pH optimum of the cells A, B, and C were 6.4, 4.5, and 4.8, resp. The measuring ranges were 1-5 mM, 2-10 mM, and 1-5 mM, while the detection limits were 0.5, 1.0, and 0.5 mM, resp. More than 600, 1000, and 800 samples could be measured with these cells, resp. Com. milk and instant dessert powder products were analyzed also. Our results showed that the cells B and C were more suitable for the detn. of the **lactose** content of milk. For samples of dairy products contg. added glucose, starch and other carbohydrates, enzyme cell A could be used for the efficient detn. of **lactose** in one step.
AN 131:184047 CA
TI Multi-enzyme biosensors with amperometric detection for determination of lactose in milk and dairy products
AU Adanyi, N.; Szabo, E. E.; Varadi, M.
CS Central Food Research Institute, Budapest, H-1022, Hung.
SO Zeitschrift fuer Lebensmittel-Untersuchung und -Forschung A: Food Research and Technology (1999), 209(3-4), 220-226
CODEN: ZLFAFA; ISSN: 1431-4630
PB Springer-Verlag
DT Journal
LA English
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 13 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 7
AB .beta.-Galactosidases from A. oryzae and a thermophilic CLONEZYME glycosidase library were used to catalyze the transfer of the .beta.-D-galactopyranosyl moiety from **lactose** to the hydroxyl groups of hydroxyethylcellulose (HEC) in sodium acetate buffer. The degree of substitution was quantified by using **galactose oxidase** enzymic assays. Depolymn. was also obsd. in the course of the transglycosylation reactions.
AN 131:196189 CA
TI Enzymatic modification of hydroxyethylcellulose by transgalactosylation with .beta.-galactosidases
AU Li, Jun; Cheng, H. N.; Nickol, Robert G.; Wang, Peng George
CS Department of Chemistry, Wayne State University, Detroit, MI, 48202, USA
SO Carbohydrate Research (1999), 316(1-4), 133-137
CODEN: CRBRAT; ISSN: 0008-6215
PB Elsevier Science Ltd.
DT Journal
LA English
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 14 OF 64 CA COPYRIGHT 2003 ACS
AB Oxidn. of polystyrene deriv. having galactose residue (PVLA) was achieved by use of **galactose oxidase** which can specifically oxidize the C-6 hydroxymethyl of galactose residue. The oxidn. behavior was evaluated by rate of oxidn., Michaelis const. (Km) and max. velocity. In high concn. of PVLA, the rate of oxidn. increased by addn. of arlacel C, nonionic surfactants. Km value of PVLA was very low compared with that of its monomer and **lactose**.
AN 130:297070 CA
TI Oxidation behavior of glycosylated polymer by use of galactoseoxidase
AU Fukudome, Norihiro
CS Japan
SO Miyakonojo Kogyo Koto Senmon Gakko Kenkyu Hokoku (1999), 33, 43-47
CODEN: MKKHD6; ISSN: 0286-116X
PB Miyakonojo Kogyo Koto Senmon Gakko
DT Journal
LA Japanese

L6 ANSWER 15 OF 64 CA COPYRIGHT 2003 ACS
AB Fig. 4 is given with the correct y-axis.
AN 130:91990 CA
TI Catalytic Properties of Galactose Oxidase to Liposome-Forming Amphiphiles Which Have Many Pendent Galactose Residues. [Erratum to document cited in CA129:272192]
AU Ohno, Kohji; Kitano, Hiromi
CS Department of Chemical and Biochemical Engineering, Toyama University, Toyama, 930, Japan
SO Bioconjugate Chemistry (1998), 9(6), 847
CODEN: BCCHES; ISSN: 1043-1802
PB American Chemical Society
DT Journal
LA English

L6 ANSWER 16 OF 64 CA COPYRIGHT 2003 ACS
AB A galactose-carrying vinyl monomer [2-(methacryloyloxy)ethyl .beta.-D-galactopyranoside, MEGal] was polymd. by using a lipophilic radical initiator. The amphiphiles obtained (DODA-PMEGal) formed stable liposomes by mixing with phospholipids, and the galactose residues on the liposome surface were effectively recognized and oxidized by galactose oxidase. The affinity (estd. by the 1/Km value) of galactose oxidase for the galactose residues on the liposomes was higher than those for free galactose and MEGal and dependent on the length of galactose-carrying

polymer chains on the liposome surface and the fluidity of the membranes, while not significantly influenced by the surface d. of galactose residues on the liposomes. The affinity of galactose oxidase for the galactose-carrying linear polymers, which were prepd. by using an ordinary azo-type radical initiator and a chain-transfer reagent, was also higher than those for free galactose and MEGal and dependent on the d.p. of MEGal. The affinity was, however, relatively much smaller than those for DODA-PMEGals incorporated in liposomes.

AN 129:272192 CA
TI Catalytic Properties of Galactose Oxidase to Liposome-Forming Amphiphiles Which Have Many Pendent Galactose Residues
AU Ohno, Kohji; Kitano, Hiromi
CS Department of Chemical and Biochemical Engineering, Toyama University, Toyama, 930, Japan
SO Bioconjugate Chemistry (1998), 9(5), 548-554
CODEN: BCCHES; ISSN: 1043-1802
PB American Chemical Society
DT Journal
LA English
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 17 OF 64 CA COPYRIGHT 2003 ACS
AB C-6-carboxylated chitosan obtained by oxidn. of chitosan was selectively modified in order to generate derivs. similar to bacterial antigens. Selective O-acetylation of 6-carboxyl chitosan afforded a modified polysaccharide with the 2-amino group available for further modifications to create carbonyl groups. A deaminative degrdn. reaction allowed the formation of oligosaccharides with terminal aldehyde groups. Reductive alkylation with **lactose** introduced lactityl branches which were oxidized with **galactose oxidase** to give aldehyde groups in its D-galactose residues.

AN 129:5800 CA
TI Chemical modifications of carboxylated chitosan
AU Lillo, L. E.; Matsuhiro, B.
CS Departmento de Ciencias Quimicas, Facultad de Quimica y Biologia, Universidad de Santiago de Chile, Santiago, 2, Chile
SO Carbohydrate Polymers (1998), Volume Date 1997, 34(4), 397-401
CODEN: CAPOD8; ISSN: 0144-8617
PB Elsevier Science Ltd.
DT Journal
LA English
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 18 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 8
AB A biosensor attached to a flow injection anal. (FIA) system was developed for the automatic detn. of galactoside conjugates and glycerol. The biosensor was based on the enzymic reaction of **galactose oxidase** (GalOD) using galactose, raffinose, **lactose** and glycerol as substrates. GalOD converts galactoside conjugates to galactohexodialdose conjugates and glycerol to glyceraldehyde with formation of hydrogen peroxide and consumption of oxygen. Variation of dissolved oxygen in the carrier was estd. utilizing an amperometric oxygen probe. The FIA system consisted in a multichannel peristaltic pump, an injection valve and an electronic transducer which were controlled by the CAFCA software. Stability of the enzyme and optimal working condition were investigated. Optimum pH for the immobilized enzymes under these exptl. conditions was 7.4 and the enzyme retained 80% of the original activity after two months of use. Studies on the dynamical response of the biosensor showed that the elapsed time between two successive injections could be as short as 120 s without signal deterioration when the flow rate was 2 mL/min and 50 l of injection vol. Sensitivity of the biosensor was higher for galactose followed by raffinose, **lactose**

and glycerol. The sensor showed linear response between 0.2 and 2 mM for galactose, 0.5 and 6 mM for raffinose, 25 and 250 mM for **lactose**, and 2 and 200 mM for glycerol.

AN 130:49316 CA
TI Online monitoring of galactoside conjugates and glycerol by flow injection analysis
AU Amarita Vega, Felix; Nunez, Carlos G.; Weigel, Beate; Hitzmann, Bernd; Diaz Ricci, Juan C.
CS Facultad de Ciencias, Departamento de Bioquimica y Biologia Molecular, UNV/EHU, Bilbao, Spain
SO Analytica Chimica Acta (1998), 373(1), 57-62
CODEN: ACACAM; ISSN: 0003-2670
PB Elsevier Science B.V.
DT Journal
LA English
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 19 OF 64 CA COPYRIGHT 2003 ACS
AB Methods are described for prepg. surface-active lactose oligosaccharides with lactose being aminated reductively, in a one-step process, using a C1-C20 alkylamine and hydrogen in the presence of a transition metal catalyst; or lactose being aminated by means of reactive processing per part by wt. of lactose, a C1-C20 alkylamine being used and the N-alkyl-lactosylamine being reduced; or lactose being reacted with an alkylamine and the N-alkyllactosyl-amine obtained being acylated; lactose being reacted with an acylamine or a urea; and/or a lactylamine or lactosylamine being oxidized, at least 2, in particular 4-50, primary alc. groups per 100 being converted into a carboxylic acid; and/or a lactylamine or lactosylamine being converted into an amine acid. The derivs. are useful as surfactants, emulsifiers, and dispersants. Instead of lactose derivs. of other galacto-oligo-saccharides can also be prepd. and used. Thus, N-octyllactlamine was prepd. by condensation of lactose with octylamine. Surface tension at crit. micelle concns. of N-octyllactlamine was 31.2 mN/m.

AN 127:234557 CA
TI Preparation of lactose-containing oligosaccharides as surfactants, emulsifiers, and dispersants
IN Kammelar, Robert Willem Frederik; Timmermans, Henricus Johannes Antonius Rita; Frikkee-Dekker, Petronella Johanna; Van Haveren, Jacobus
PA Cooperatieve Weiproduktenfabriek "BORCULO" W.A., Neth.; Kammelar, Robert Willem Frederik; Timmermans, Henricus Johannes Antonius Rita; Frikkee-Dekker, Petronella Johanna; Van Haveren, Jacobus
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9730063	A2	19970821	WO 1997-NL70	19970219
	WO 9730063	A3	19971023		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	NL 1002389	C2	19970820	NL 1996-1002389	19960219
	CA 2245222	AA	19970821	CA 1997-2245222	19970219
	AU 9717359	A1	19970902	AU 1997-17359	19970219
	EP 882056	A2	19981209	EP 1997-904647	19970219

R: BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE

	BR 9707558	A	20000104	BR 1997-7558	19970219
	JP 2000504719	T2	20000418	JP 1997-529225	19970219
PRAI	NL 1996-1002389	A	19960219		
	NL 1996-1004372	A	19961028		
	WO 1997-NL70	W	19970219		

OS MARPAT 127:234557

L6 ANSWER 20 OF 64 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AB C-6-carboxylated chitosan obtained by oxidation of chitosan was selectively modified in order to obtain derivatives similar to bacterial antigens. Selective O-acetylation of 6-carboxyl chitosan afforded a modified polysaccharide with the 2-amino group available for further modifications to create carbonyl groups. A deaminative degradation reaction allowed the formation of oligosaccharides with terminal aldehyde groups. Reductive alkylation with **lactose** introduced lactityl branches which were oxidized with **galactose oxidase** to give aldehyde groups in its D-galactose residues.

AN 1998:251162 BIOSIS

DN PREV199800251162

TI Chemical modifications of carboxylated chitosan.

AU Lillo, L. E. (1); Matsuhiro, B.

CS (1) Dep. Ciencias Quimicas, Fac. Quimica Biologia, Univ. Santiago de Chile, Castilla 5659, Santiago 2 Chile

SO Carbohydrate Polymers, (Dec., 1997) Vol. 34, No. 4, pp. 397-401. ISSN: 0144-8617.

DT Article

LA English

L6 ANSWER 21 OF 64 CA COPYRIGHT 2003 ACS

AB Title sensors are described that have a laminated structure. The sensor is provided with a membrane of which, during action, one side comes in contact with a fluid to be measured, which membrane is permeable for the material to be detd. in acid but impermeable to components having a high mol. wt., which may be present in the material to be measured. Further, the sensor is comprised of an enzyme-contg. hydrophilic site on the other side of the above-mentioned membrane, at which site the material to be detd. reacts with acid to form hydrogen peroxide, as well as a detection electrode wherewith the quantity of hydrogen peroxide formed can be detected. Electrochem. sensors are described for detg. glucose by means of glucose oxidase, galactose by means of **galactose oxidase**, and **lactose** by means of **galactose oxidase** and glucose oxidase.

AN 125:52997 CA

TI An electrochemical sensor for determination of substances that react with acids when under the influence of enzymes

IN Janssen, Leonard Johannes Josep

PA Technische Universiteit Eindhoven, Neth.

SO Neth. Appl., 14 pp. CODEN: NAXXAN

DT Patent

LA Dutch

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 9401621	A	19960501	NL 1994-1621	19941003
PRAI	NL 1994-1621		19941003		

L6 ANSWER 22 OF 64 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 9

AB The quality and quantity of different sugars play a very important role in studying the carbohydrate metabolism of yeast. During the bioprocesses there is a need to follow the concentrations of these sugars. Authors have reported on the development of biosensors for determination of glucose and

maltose previously. The aim of this research was to construct a sensor for determining galactose in fermentation broths to prepare the basis for an online monitoring system. Using a modified thin-layer enzyme cell connected to an electrochemical detector cell, a biosensor has been developed for this purpose. Galactose was oxidized with immobilized **galactose oxidase** enzyme (EC 1.1.3.9) and the hydrogen peroxide generated during the enzyme reaction was determined with an amperometric detector. The parameters for the biochemical and electrochemical reactions were optimized. The pH optimum of 6.6 was found when using phosphate buffer. The buffer solution completed by micro elements (Mg-2+, Se-2+) gave more stable signs. The activities for raffinose, **lactose**, glycerol and dihydroxyacetone were 68, 16, 6 and 430%, respectively. With the thin-layer cell more than 900 samples were measured in 6 weeks. Samples obtained from different fermentations were measured with the newly developed galactose sensor and the results were compared with the standard UV method. The correlation coefficient was 0.991. The results showed that the application of the new biosensor was successful.

AN 1996:479348 BIOSIS
DN PREV199699194604
TI Application of biosensor for monitoring galactose content.
AU Szabo, E. E.; Adanyi, N.; Varadi, M.
CS Central Food Res. Inst., Herman Otto ut 15, H-1022 Budapest Hungary
SO Biosensors & Bioelectronics, (1996) Vol. 11, No. 10, pp. 1051-1058. ISSN: 0956-5663.
DT Article
LA English

L6 ANSWER 23 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 10
AB **Galactose oxidase** from Dactylium dendroides was purified and immobilized on a carbon electrode in a redox polymer network of a polyvinylpyridine, partially N-complexed with osmiumbis(bipyridine)chloride (POsEA). The c.d. of the electrodes depended on the concn. of phosphate elution buffer. By addnl. crosslinking with a 1% glutaraldehyde soln. in 50 mM phosphate buffer, pH 7.0, an electrode with an initial c.d. of 0.8 mA/cm2 was obtained. Operational half life times were in the order of 1.2 h. The affinity of the immobilized enzyme for galactose, **lactose**, raffinose, glycerol and dihydroxyacetone was higher than described in literature for the enzyme in soln. Optimal temp. for the enzyme electrode was 30.degree.. The pH optimum for the immobilized enzyme was higher than for the enzyme in soln.

AN 125:109452 CA
TI Electron transfer between galactose oxidase and an electrode via a redox polymer network
AU Stigter, E. C. A.; Carnicero, A. M.; van der Lugt, J. P.; Somers, W. A. C.
CS TNO Nutrition Food Res. Inst., Dep. Biochem., Zeist, 3700 AJ, Neth.
SO Biotechnology Techniques (1996), 10(7), 469-474 CODEN: BTECE6; ISSN: 0951-208X
PB Chapman and Hall
DT Journal
LA English

L6 ANSWER 24 OF 64 CA COPYRIGHT 2003 ACS
AB Significant amts. of galactose (GAL), up to 0.6% in water phase of cheese, can be found in the core but not in the peripheral part of molded Grana Padano cheese produced with natural whey culture. These results and the always obsd. quick disappearance of **lactose** and glucose indicate that the early fermn. takes place in the cheese core as well. Then the fermn. is slower or inhibited by high temp. (>50.degree.C) for a prolonged time (>6h) and low pH (.apprx.5.1) in the cheese core. The higher capability of some selected starters for Grana cheese to metabolize GAL leads to the disappearance of this sugar in the cheese within 24 h after molding. GAL is fermented by several heterofermentative contaminating

microorganisms. In this study the residual GAL was found in blown Grana Padano and Parmigiano Reggiano cheeses. Hence, a relationship between the presence of GAL and some defects of Grana Padano cheese is hypothesized. The amt. of residual GAL in molded cheeses can be detd. by a **galactose oxidase** (EC 1.1.3.9) biosensor described here. Its sensitivity (.apprx.3 mg/100 mL water phase of cheese), range of linear response (from 5 to 400 mg/100mL), accuracy comparable with HPLC, and the short time of the analyses indicate that residual GAL may be successfully detd. by an online biosensor during cheese making.

AN 127:160870 CA
TI Residual galactose in Grana Padano cheese and possible detection by a biosensor
AU Pellegrino, L.; De Noni, I.; Mannino, S.; Resmini, P.
CS Centro Studi Latte CNR, Universita degli Studi, Milan, Italy
SO Industria del Latte (1996), 32(4), 49-62
CODEN: INLADZ; ISSN: 0019-7513
PB Centro Sperimentale del Latte
DT Journal
LA Italian

L6 ANSWER 25 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 11
AB The entrapment of **galactose oxidase** (GAO) on an electrode surface by coadsorption with a cationic amphiphilic pyrrole and electropolymn. of this pyrrole monomer is described. This simple and rapid procedure for biosensor construction provides very fast responsive and sensitive GAO-based sensors to galactose and **lactose**. The electrode response is based on the electrochem. detection of enzymically generated hydrogen peroxide. The stability, optimum pH and selectivity of the bioelectrode as well as the characteristics of the immobilized **galactose oxidase** have been detd. Poly(amphiphilic pyrrole) films have been electrogenerated on the surface of the bioelectrode and the effect of such addnl. coatings on the biosensor selectivity have also been examd.

AN 121:103293 CA
TI Detection of galactose and **lactose** by a poly(amphiphilic pyrrole)-**galactose oxidase** electrode
AU Cosnier, Serge; Innocent, Christophe
CS Lab. Elec. Org. Photochim. Redox, Univ. Joseph Fourier Grenoble, Grenoble, 38041, Fr.
SO Analytical Letters (1994), 27(8), 1429-42
CODEN: ANALBP; ISSN: 0003-2719
DT Journal
LA English

L6 ANSWER 26 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 12
AB A **galactose oxidase** (Gal-OD) electrode was constructed. Gal-OD was placed, after its immobilization in gelatin, between 2 dialysis membranes and tightened to a silver-platinum electrode. The activity of the enzyme electrode was increased greatly through applying potassium ferricyanide and copper chloride. The optimum position for the mechanism of the Gal-OD reaction was discussed. A pH optimum of 7.0 was detd. for the Gal-OD electrode. Below pH 5.0 a strong decrease in activity was obsd. The sodium acetate and citric acid-phosphate buffers caused a strong decrease in activity. Gal-OD showed an apparent activity 6-fold higher for dihydroxyacetone than that for D-galactose. The apparent activity for D-galactose, D-**lactose**, D-melibiose, raffinose and stachyose are 100, 7.5, 82.7, 85.1 and 113.4%, resp. A linear measuring range was detd. for D-galactose, D-**lactose**, D-melibiose, stachyose and raffinose up to 50, 60, 70, 70 and 100 mM, resp.

AN 122:26961 CA
TI Construction and applications of an enzyme electrode for determination of galactose and galactose-containing saccharides
AU Schumacher, D.; Vogel, J.; Lerche, U.

CS Fac. Food Sci. Biotechnol., Tech. Univ., Berlin, 10115, Germany
SO Biosensors & Bioelectronics (1994), 9(2), 85-90
CODEN: BBIOE4; ISSN: 0956-5663
DT Journal
LA English

L6 ANSWER 27 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 13
AB Two types of amperometric **lactose** enzyme sensors based on the enzyme systems **galactose oxidase** (single-enzyme electrode), or .beta.-galactosidase and glucose oxidase (2-enzyme electrode) with a H2O2 base electrode were constructed. The enzymes were chem. immobilized onto a dialysis membrane using the BSA/glutaraldehyde method. The properties of 2 types of **lactose** sensors were compared, and factors with influence electrode response, such as buffer, pH and immobilization of enzyme, were studied. The calibration curve for **lactose** is linear between 1 .times. 10-5 and 1 .times. 10-1M, at room temp., in a phosphate buffer (0.2M, pH 7.38). The response times were <10 s and <2 min for the initial rate and the steady-state response, resp. The single-enzyme electrode was used for several hundred assays over a period of 1 mo without loss of activity. **Lactose** in milk was detd., with good comparison with the AOAC method.
AN 112:115041 CA
TI Fast responding lactose enzyme electrode
AU Xu, Yuanhang; Guilbault, George G.; Kuan, Shia S.
CS Dep. Chem., Univ. New Orleans, New Orleans, LA, 70148, USA
SO Enzyme and Microbial Technology (1990), 12(2), 104-8
CODEN: EMTED2; ISSN: 0141-0229
DT Journal
LA English

L6 ANSWER 28 OF 64 CA COPYRIGHT 2003 ACS
AB Four types of **lactose**-sensing electrodes based on uni-, di-, tri- and tetra-enzyme systems were studied. The appropriate combinations of enzymes [lactase (L), glucose oxidase (G), mutarotase (M) and **galactose oxidase** (G)] were chem. immobilized on nylon net which was placed over a Pt electrode housed in a three-electrode Stelte micro-cell modified for flow injection. **Lactose** was detd. amperometrically by monitoring the hydrogen peroxide enzymolysis product at +600 mV vs. a Ag-AgCl ref. electrode. The strengths of signals from six different **lactose** electrodes based on combinations of the four enzymes decreased in the order: LMG > LMGGa > LG > LGGa > LGa > Ga. The expected two-fold increase in sensitivity from the tri-enzyme electrode LGGa, and the tetra-enzyme electrode, LMGGa, over the tri-enzyme electrode, LMG, did not materialize. Rather, the LMG electrode was superior in terms of **lactose** response and linear range (3 .times. 10-6 to 2 .times. 10-3M). In addn., the LMG electrode also exhibited short response times (15-20 s), high resistance to temp., a long lifetime (only a 5% redn. insignals after 18 h continuous flow of 1 mM **lactose**), and good storage stability (.apprx.8 mo in 0.1M, pH 8 phosphate buffer at 4.degree.) with intermittent use. Data for the detn. of **lactose** in foods with the enzyme electrode were comparable to those obtained using a sol. enzyme test kit (Oehringer Mannheim UV method).
AN 112:156797 CA
TI Flow-through multi-enzyme electrodes for the determination of lactose
AU Abdul Hamid, Junainah; Moody, G. J.; Thomas, J. D. R.
CS Coll. Cardiff, Univ. Wales, Cardiff, CF1 3TB, UK
SO Analyst (Cambridge, United Kingdom) (1989), 114(12), 1587-92
CODEN: ANALAO; ISSN: 0003-2654
DT Journal
LA English

L6 ANSWER 29 OF 64 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 1989:507386 BIOSIS

DN BR37:117045
TI EVALUATION OF AN IMMOBILIZED **GALACTOSE OXIDASE** METHOD FOR DETERMINATION OF **LACTOSE**.
AU SCHMIDT D; GEILMAN W G; HERFURTH-KENNEDY C; GREENE B
CS CALIF. POLYTECHNIC STATE UNIV., SAN LUIS OBISPO.
SO COMBINED MEETING OF THE AMERICAN DAIRY SCIENCE ASSOCIATION AND THE AMERICAN SOCIETY OF ANIMAL SCIENCE, LEXINGTON, KENTUCKY, USA, JULY 31-AUGUST 4, 1989. J DAIRY SCI. (1989) 72 (SUPPL 1), 128.
CODEN: JDSCAE. ISSN: 0022-0302.
DT Conference
FS BR; OLD
LA English

L6 ANSWER 30 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 14
AB The biosynthesis of **galactose oxidase** (I) by F. graminearum was studied in a synthetic medium contg. 1-2% of different sugars. Galactose and L-sorbose were the most effective C sources. Glucose caused catabolite repression and **lactose** had a neg. effect. Addn. of cAMP eliminated glucose effect and had no neg. effect on I synthesis.
AN 110:131931 CA
TI Effect different carbon sources on galactose oxidase synthesis in Fusarium graminearum
AU Buglova, T. T.
CS USSR
SO Mikologiya i Fitopatologiya (1988), 22(6), 520-4
CODEN: MIFIB2; ISSN: 0026-3648
DT Journal
LA Russian

L6 ANSWER 31 OF 64 CA COPYRIGHT 2003 ACS
AB Electrochem. biosensors for lactate, pyruvate, and .beta.-hydroxybutyrate based on O, H2O2, and NADH sensors coupled with oxidase and dehydrogenase enzymes were developed and used in conjunction with an artificial pancreas in expts. with extracorporeal circulation. Such procedures allow the fate of these species involved in glucose metab. to be clarified during insulin treatment of diabetic patients. Studies with a glucose oxidase electrode for in-line detn. of glucose produced by hydrolysis of cellobiose in a bioreactor are reported; for the detn. of glucose in the presence of high concns. of cellobiose, the purity of glucose oxidase is important in obtaining linear calibration plots. Impurities like amylase, maltase, invertase, and **galactose oxidase**, which are usually present in com. prepns. of glucose oxidase, must be absent. Another application is the amperometric detn. of **lactose**, lactate and glucose in milk samples by using a H2O2 sensor coupled with .beta.-galactosidase, lactate oxidase, and glucose oxidase. The procedures outlined are simple and are the short response time enable milk to be monitored during processing.
AN 110:3882 CA
TI In-line determination of metabolites and milk components with electrochemical biosensors
AU Mascini, M.; Moscone, D.; Palleschi, G.; Pilloton, R.
CS Inst. Anal. Chem., Univ. Florence, Florence, Italy
SO Analytica Chimica Acta (1988), 213(1-2), 101-11
CODEN: ACACAM; ISSN: 0003-2670
DT Journal
LA English

L6 ANSWER 32 OF 64 CA COPYRIGHT 2003 ACS
AB The hemagglutination and carbohydrate-binding properties of **galactose oxidase** of F. graminearum were investigated. The enzyme was purified to homogeneity as shown by isoelec. focusing. Both partially purified and homogeneous prepns. of **galactose oxidase** agglutinated rabbit erythrocytes pretreated with trypsin

or neuraminidase, but not untreated erythrocytes. Hemagglutination was a temp.-sensitive process. The carbohydrate specificity of the oxidase was examd. by inhibition by various sugars of the hemagglutination. .alpha.-Methyl-D-galactopyranoside was the most effective competitor, followed by N-acetyl-D-galactosamine, raffinose, and D-galactose; D-galactosamine, **lactose**, and galactan, as well as 9 other sugars tested had little or no effect on hemagglutination. The effectiveness of these carbohydrates to inhibit hemagglutination correlated fully with their inhibition of **galactose oxidase** activity. The different temp. optimums for these 2 effects was attributed to the existence of .gtoreq.2 different active centers, 1 for enzymic activity and .gtoreq.1 with lectin activity. Further conformation of the sepn. of enzymic and lectin sites was provided by the complete inhibition of lectin activity by EDTA, hydroxylamine, and Na pyrophosphate, which had relatively little effect on the enzymic activity, and by the complete inhibition of enzymic activity by NaN3 and Na diethylthiocarbamate, which had no effect on oxidase lectin activity.

AN 105:205418 CA
TI Lectin properties of galactose oxidase of Fusarium graminearum IMV-F-1060
AU Zakharova, I. Ya.; Kovalenko, E. A.; Buglova, T. T.
CS D. K. Zabolotnii Inst. Microbiol. Virol., Kiev, USSR
SO Biokhimiya (Moscow) (1986), 51(8), 1249-55
CODEN: BIOHAO; ISSN: 0006-307X
DT Journal
LA Russian

L6 ANSWER 33 OF 64 CA COPYRIGHT 2003 ACS
AB Impermeant probes for biol. bilayer membranes are described which interact noncovalently with the membrane, bear reporter groups which partition into membrane lipids, and can be used for detn. of lipid fluidity and lateral diffusion in individual leaflets of the bilayer. The probes consist of a membrane-impermeant moiety (saccharide or peptide), a connecting arm (e.g. hydrocarbon), and a fluorescent or free radical reporter group. For example, 49.5 .mu.mol oligosaccharide (**lactose**, raffinose, or stachyose) in 1.25 mL 0.1M K phosphate (pH 6.0) was subjected to terminal galactose oxidn. to an aldehyde at C-6 with Dactylium dendroides **galactose oxidase** in the presence of bovine liver catalase. The pH was lowered to 5.6 and 16.5 .mu.mol 4-(1-pyrene)butyryl hydrazide was added. After stirring at 37.degree. for 2 h and overnight at room temp., the Schiff base was reduced with NaBH4. Also, a peptidyl probe was prepd. by adding a soln. of glutathione-S-succinimide (0.37 mmol in 5 mL 50% EtOH) dropwise to 3.7 mmol 1,2-ethanedithiol in 10 mL EtOH/THF/H2O (1.1:1.8:2.1 by vol.) with stirring at room temp., extg. with CHCl3, dilg. the aq. phase to 24 mL with H2O, adjusting the pH to 6.8, and adding 0.26 mmol N-(1-pyrenyl)maleimide in 24 mL EtOH/Me2CO (1:1). TLC revealed 3 fluorescent products.

AN 104:31381 CA
TI Impermeant spectroscopic probes
IN Schachter, David; Abbott, Richard E.; Cogan, Uri
PA Columbia University, USA
SO U.S., 24 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4537718	A	19850827	US 1982-436799	19821026
PRAI	US 1982-436799		19821026		

L6 ANSWER 34 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 15
AB A flow injection manifold contg. a dialyzer and reactors with immobilized **galactose oxidase** and peroxidase was used for the detn. of galactose in urine, **lactose** in milk and dihydroxyacetone in a

biotechnol. reaction medium. The H2O2 which is formed by the **galactose oxidase** reaction was detected by amperometric redn. of a mediator. The latter had been produced from H2O2 in a peroxidase catalyzed reaction. The H2O2 detection step was studied with several mediators and hexacyanoferrate (III) was selected. An ion exchange HPLC procedure was used to purify the **galactose oxidase**, in particular from catalase, and the kinetics and the selectivity of a reactor contg. the immobilized enzyme was investigated. Columns for removal of certain interferents such as ascorbic acid were used in the detn. of galactose in urine. The response to galactose stds. was linear from the detection limit of 2 .mu.M to 60 mM. The throughput was 45 samples per h and the relative std. deviation 0.4%.

AN 103:101127 CA
TI Amperometric determination of galactose, **lactose** and dihydroxyacetone using **galactose oxidase** in a flow injection system with immobilized enzyme reactors and on-line dialysis
AU Lundbaeck, Hans; Olsson, Bo
CS Dep. Anal. Chem., Univ. Lund, Lund, S-221 00, Swed.
SO Analytical Letters (1985), 18(B7), 871-89
CODEN: ANALBP; ISSN: 0003-2719
DT Journal
LA English

L6 ANSWER 35 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 16
AB A convenient synthesis and purifn. are described of a series of 125I-labeled glycoconjugates, and an evaluation of their efficiency of retention in liver is presented following degrdn. of a model carrier protein, asialofetuin. Glycoconjugates were prepd. in 65-90% yield by reductive amination of reducing sugars with arom. amines using NaBH3CN. The products were purified in a single ion-exchange chromatog. step, and then labeled with 125I. The derivs. prepd. were mono- and disubstituted lactitol-, cellobiitol- and glucitol-[125I]tyramine, and lactitol-[125I]tyrosine. 125I-Glycoconjugates were coupled to asialofetuin using either cyanuric chloride or, for **lactose** -contg. labels, by treatment with **galactose oxidase** followed by reductive amination with NaBH3CN. Attachment of labels by either procedure did not affect the normal rapid clearance of asialofetuin from the rat circulation nor its uptake and degrdn. in liver lysosomes. Leakage of 125I-labeled degrdn. products from cells was measured by following the kinetics of loss of whole-body radioactivity. Degrdn. products from larger, disubstituted glycoconjugates were retained more efficiently than those from smaller and monosubstituted derivs., and glycoconjugates coupled to protein via reductive amination were retained in the body more efficiently than those coupled by cyanuric chloride. Overall, dilactitol-[125I]tyramine coupled to protein by reductive amination was entrapped most efficiently in liver.

AN 103:192624 CA
TI Iodine-125-glycoconjugate labels for identifying sites of protein catabolism in vivo: effect of structure and chemistry of coupling to protein on label entrapment in cells after protein degradation
AU Strobel, Jeffrey L.; Baynes, John W.; Thorpe, Suzanne R.
CS Dep. Chem., Univ. South Carolina, Columbia, SC, 29208, USA
SO Archives of Biochemistry and Biophysics (1985), 240(2), 635-45
CODEN: ABBIA4; ISSN: 0003-9861
DT Journal
LA English

L6 ANSWER 36 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 17
AB **Galactose oxidase** prepns. were obtained from F. graminearum IMV-F-N 1060 immobilized on aminoorganosilochromes activated by cyanic chloride and toluene 2,4-diisocyanate. The immobilized prepns. were studied for their selective action on different carbohydrate substrates and for the pH medium dependence of the activity. Potassium ferricyanide had an activating effect on the immobilized enzyme. The

immobilized **galactose oxidase** prepns. may be used for the anal. of galactose and **lactose**.

AN 101:146790 CA
TI Some properties of galactose oxidase from Fusarium graminearum IMV-F-N 1060 immobilized on aminoorganosilochromes
AU Kondakova, L. V.; Yanishpol'skii, V. V.; Tertykh, V. A.; Buglova, T. T.; Koroleva, O. V.
CS L. V. Pisarzhevskii Inst. Phys. Chem., Kiev, USSR
SO Ukrainskii Biokhimicheskii Zhurnal (1978-1999) (1984), 56(4), 394-8
CODEN: UBZHD4; ISSN: 0201-8470
DT Journal
LA Russian

L6 ANSWER 37 OF 64 CA COPYRIGHT 2003 ACS
AB Specific attachment of carbohyrates to the 2-amino functions of chitosan transforms this water-insol., linear polymer into branched-chain water-sol. derivs. Facile conversions can be achieved by reductive alkylation using NaCNBH3 and any aldehydo or keto sugar, by Schiff's base formation, or by amidation reactions using carboxylic acid or lactone derivs. Exptl. results are presented for a series of mono-, di-, and tri-, and polysaccharides, including D-glucose, N-acetylglucosamine, D-glucosamine, D-galactose, D-galactosamine, D-fructose, D-glucoheptonic acid .gamma.-lactone, **lactose**, cellobiose, maltose, melibiose, maltotriose, streptomycin sulfate, C6-aldehydo-cycloheptamylose, and dextran. These procedures facilitate the prepn. of polymer derivs. with a variety of comb-like, tree-like, and other branching types. Many of these products are amenable to further, specific chem. modifications; this is demonstrated by the introduction, via **galactose oxidase** treatment, of C-6 aldehyde functions into the pendant galactose residues of derivs. I. The synthetic chitosan derivs. exhibit a no. of useful and uncommon properties in terms of their soln. characteristics. I formed inclusion complexes with iodine, **lactose**, and 4-oxo-2,2,6,6-tetramethylpiperidine-1-oxyl. Soly. modifications were accomplished by co-reaction of hydrophilic (**lactose**) and hydrophobic (various alkyl) residues, affording products which were sol. in both aq. and org. media. Reductive alkylation of chitin afforded the 1-deoxylactit-1-yl deriv. which was water insol. but formed sols in water and several org. solvents. Factors affecting the soln. behavior of chitosan and its branched derivs. have been evaluated and mechanisms have been discussed for solute interactions and conformational transitions.
AN 100:156910 CA
TI Some chemical and analytical aspects of polysaccharide modifications. III. Formation of branched-chain, soluble chitosan derivatives
AU Yalpani, Mansur; Hall, Laurance D.
CS Dep. Chem., Univ. British Columbia, Vancouver, BC, V6T 1Y6, Can.
SO Macromolecules (1984), 17(3), 272-81
CODEN: MAMOBX; ISSN: 0024-9297
DT Journal
LA English

L6 ANSWER 38 OF 64 CA COPYRIGHT 2003 ACS
AB For the detn. of UDP-N-acetyl-galactosamine (UDPGalNAc), UDPGalNAc is oxidized by **galactose oxidase**, and the H2O2 produced in the reaction is detd. by spectrophotometry with peroxidase and o-toluidine. For example, UDPGalNAc in a sample (0.5-2 mM) was treated with a soln. contg. **galactose oxidase**, peroxidase, o-toluidine, and Tween 20 in phosphate buffer (pH 7.0) at 30.degree. for 120 min., and the absorbance was measured at 480 nm. D-Galactose or **lactose** must be removed from a sample by, e.g., paper chromatog., before the detn. of UDPGalNAc.
AN 100:153449 CA
TI Determination of uridine diphosphoacetylgalactosamine
PA Seitetsu Chemical Industry Co., Ltd., Japan; Japanese Red Cross Society
SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58212800	A2	19831210	JP 1982-95985	19820603
	JP 61039038	B4	19860902		
PRAI	JP 1982-95985		19820603		

L6 ANSWER 39 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 18
AB The major plasma membrane glycoproteins of AH-66 hepatoma cells were radiolabeled by 3 methods which are known to label cell surface carbohydrates. The labeled components were sepd. by polyacrylamide gel electrophoresis and detected by fluorog. The AH-66 cells were unusual because a single major glycoprotein with an apparent mol. wt. of 165,000 was almost exclusively labeled by both neuraminidase-**galactose oxidase**-NaB3H4 and dil. IO4--NaB3H4 treatments. The major glycoprotein was not labeled by **galactose oxidase** -NaB3H4 treatment. When the major glycoprotein labeled by the neuraminidase-**galactose oxidase**-NaB3H4 procedure was solubilized with Triton X-100 and then subjected to affinity chromatog. on Sepharose-conjugated Ricinus communis agglutinin II, the 3H-labeled major glycoprotein bound to Sepharose-conjugated R. communis agglutinin II lectin and was eluted with **lactose**. These results indicated that the major glycoprotein contained sialylgalactosyl or sialyl-N-acetylgalactosaminyl terminal groups, which are exposed on the external surface of the plasma membranes of AH-66 cells.
AN 99:155823 CA
TI Cell surface radiolabeling of the carbohydrate moieties of the plasma membrane major glycoprotein of AH-66 hepatoma ascites cells
AU Nakajo, Shigeo; Nakaya, Kazuyasu; Nakamura, Yasuharu
CS Fac. Pharm. Sci., Showa Univ., Tokyo, 142, Japan
SO Chemical & Pharmaceutical Bulletin (1983), 31(6), 2039-44
CODEN: CPBTAL; ISSN: 0009-2363
DT Journal
LA English

L6 ANSWER 40 OF 64 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 19
AB L. tropica promastigotes are easily attached to and engulfed by C3H peritoneal macrophages [from mice] in vitro at 37.degree. C. Different sugars at 0.3-0.5 M inhibited in vitro the attachment of L. tropica promastigotes to C3H peritoneal macrophages with **lactose** (Gal-.beta. [1 .fwdarw. 4]Glc) being the most efficient. Inhibition of attachment is also affected by pre-treatment of promastigotes with **galactose oxidase**. Oligosaccharides extending from promastigote and amastigote cell surfaces contain an important proportion of non-reducing galactose as does the carbohydrate-rich factor (EF) excreted by promastigotes of L. tropica and L. donovani. Apparently, Leishmania, an obligatory intracellular parasite, uses as a means of entering the host cell a cellular mechanism similar to that used in the removal of damaged cells from blood circulation. This mechanism is assumed to take advantage of the exposed sugars, particularly the exposed non-reducing galactose, on the parasite surface during the stage of attachment. Once the parasite is inside the cell, the EF it produces might have a protective function, bing inhibitory to some of the host cell lysosomal enzymes.
AN 1984:180651 BIOSIS
DN BA77:13635
TI BINDING OF LEISHMANIA PROMASTIGOTES TO MACROPHAGES.
AU ZEHAVI U; EL-ON J; PEARLMAN E; ABRAHAMS J C; GREENBLATT C L
CS FAC. AGRIC., HEBREW UNIV., P.O. BOX 12, REHOVOT 76100, ISRAEL.
SO Z PARASITENKD, (1983) 69 (4), 405-414.

CODEN: ZEPAA6. ISSN: 0044-3255.
FS BA; OLD
LA English

L6 ANSWER 41 OF 64 CA COPYRIGHT 2003 ACS
AB A specific and highly sensitive method is described for quant. detn. of galactose (I) and is based on incubation of the probe with I oxidase (GO) from Fusarium graminearum in the presence of peroxidase and o-dianisidine at 37.degree. for 30 min. The reaction is stopped by the addn. of 50% H2SO4 and the absorbance is measured at 540 nm. Initially, I is oxidized by GO (in the presence of O) to H2O2 and galactohexodialdose. Addn. of peroxidase to the reaction mixt. oxidizes the leuco form of the chromogenic compd. and converts it to a quinonoid form. The enzyme prepn., in contrast to GO from Polyporus circinatus, does not contain catalase and protease and is highly specific. Two variations of the method useful for the detn. of 2.5-25 .mu.g and 50-200 .mu.g I are given, together with characteristic properties of the reaction and exptl. conditions. Under std. exptl. conditions (0.05 M glycine pH 8.5 buffer, 0.05 mg o-dianisidine, and 5 units GO/mL sample), absorbance-time relation is linear .ltoreq.60 min for 50-100 .mu.g I/sample and for 130 min at 25 .mu.g I/sample. The method may be useful for detg. I in biol. samples.
AN 99:84570 CA
TI Use of galactose oxidase from Fusarium graminearum to quantitatively determine galactose
AU Buglova, T. T.
CS Inst. Mikrobiol. Virusol., Kiev, USSR
SO Mikrobiologicheskii Zhurnal (1978-1993) (1983), 45(3), 70-7
CODEN: MZHUDX; ISSN: 0201-8462
DT Journal
LA Russian

L6 ANSWER 42 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 20
AB The anal. applications of a novel enzyme electrode based on **galactose oxidase**, which incorporates soln.-potential control in the enzyme thin layer, are described. Under diffusion-limiting conditions, the relative sensitivity (H2O2) to certain substrates can depend quite differently upon soln. potential. This allows the measurement of certain pairs of substrates in the same soln. by making measurements at 2 preselected control potential. Two-substrate measurements on galactose-glycerol, galactose-**lactose**, and galactose-stachyose are described as well as the dependence of measurement errors on various parameters. The incorporation of soln.-potential control also improves the sensitivity and the dynamic range of the **galactose oxidase** electrode. The lower detection limits for galactose and glycerol are 0.02 and 0.04 mM, resp. The upper limits of the linear range are .apprx.70 and 400 mM, resp.
AN 97:3020 CA
TI Galactose oxidase enzyme electrode with internal solution potential control
AU Johnson, Jay M.; Halsall, H. Brian; Heineman, William R.
CS Dep. Chem., Univ. Cincinnati, Cincinnati, OH, 45521, USA
SO Analytical Chemistry (1982), 54(8), 1394-9
CODEN: ANCHAM; ISSN: 0003-2700
DT Journal
LA English

L6 ANSWER 43 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 21
AB A simple model system was developed in which lectin-mediated aggregation of glycoprotein-coated beads can be monitored by following the decrease in light scattering at 650 nm. Aggregation was characterized with the lectin of A. viscosus T14V. Its dependence on pH, temp., and stirring rate was examd., and the no. of bacterial cells in relation to the no. of latex beads resulting in optimal aggregation was established. This system has the advantage of permitting the study of a single ligand of defined

structure. The ligand d. was detd. with radiolabeled glycoproteins. Under the conditions of the assay, ligand leakage was <3%, and ligands were not displaced from the beads by various proteins, glycoproteins, or other components present in the assay mixt. Latex beads coated with asialofetuin aggregate upon the addn. of A. viscosus T14V cells. When asialofetuin was first extensively treated with purified **galactose oxidase**, no aggregation occurred. Only after redn. with NaBH4 was aggregation restored, demonstrating that galactose termini of asialofetuin are essential for the binding of A. viscosus lectin. An abs. requirement for Ca also was demonstrated. Various sugars inhibited aggregation in the following order, starting with the most effective: **lactose**, Me .beta.-D-galactopyranoside, galactose, N-acetylgalactosamine, Me .alpha.-D-galactopyranoside. Beads coated with fimbriae from A. viscosus coaggregated with neuraminidase-treated human erythrocytes and with Streptococcus sanguis cells. The aggregation was inhibited by **lactose**, indicating that the A. viscosus lectin is located in the fimbriae. Cells grown under different conditions differed in their effectiveness in aggregating glycoprotein-coated beads, suggesting differences in lectin d. or accessibility. Two different exptl. designs were used to establish the min. ligand d. for aggregation to occur. In 1 type of expt., a threshold concn. was found for asialo-.alpha.1-acid glycoprotein, but not for asialofetuin. With an alternate approach in which a different population of galactose residues was exposed, a threshold phenomenon was also demonstrated for asialofetuin. The importance of structural ligand features in the aggregation assay is discussed in view of these findings.

AN 98:15189 CA
TI Characterization of a galactose-specific lectin from Actinomyces viscosus by a model aggregation system
AU Heeb, Mary J.; Costello, Ann H.; Gabriel, Othmar
CS Sch. Med. Dent., Georgetown Univ., Washington, DC, 20007, USA
SO Infection and Immunity (1982), 38(3), 993-1002
CODEN: INFIBR; ISSN: 0019-9567
DT Journal
LA English

L6 ANSWER 44 OF 64 CA COPYRIGHT 2003 ACS
AB **Lactose** malabsorption was detected by detg. blood and urine galactose concn. with a **galactose oxidase** kit in overnight-fasted patients given orally 150 mg EtOH/kg + 50 g **lactose** in 400 mL water. The 1-point **lactose**-tolerance test described by M. Isokoski, et al. (1972) was used as a ref. in assessing the urinary method; the specificity of the test was 89-97% and its sensitivity 96-100%. Patients with blood galactose <0.3 mmol/L were classified as **lactose** malabsorbers and the rest as absorbers. Of 70 patients tested as above, 14 were **lactose** malabsorbers (20%).

AN 97:20067 CA
TI One-point urinary lactose-tolerance test
AU Arola, Heikki; Koivula, Timo; Isokoski, Mauri
CS Dep. Public Health, Univ. Tampere, Tampere, SF-33101/10, Finland
SO Lancet (1982), 1(8273), 676
CODEN: LANCAO; ISSN: 0023-7507
DT Journal
LA English

L6 ANSWER 45 OF 64 CA COPYRIGHT 2003 ACS
AB Selective, multipurpose electrodes were developed from a previously described glucose electrode based on amperometric detection of H2O2. Several single or multienzyme systems, including **galactose oxidase**, cholesterol oxidase, glucoamylase with glucose oxidase, and invertase with glucose oxidase, can be covalently bound to collagen membranes and attached to a Pt anode for monitoring the H2O2 generated. The probes allow fast and sensitive measurements of galactose, free

cholesterol, and maltose. Analogous electrodes are convenient for the assay of sucrose and **lactose**, with lower sensitivity. For disaccharide measurements, a comparative study of membranes produced by random coimmobilization, stacking of membranes, and asym. coupling is reported. Asym. coupling improved the electrode performances in every case. One enzyme membrane is readily replaced by another in the electrode construction and the sensors can be used for hundreds of assays.

AN 95:2834 CA
TI Multipurpose electrode with different enzyme systems bound to collagen films
AU Bertrand, C.; Coulet, P. R.; Gautheron, D. C.
CS Lab. Biol. Technol. Membranes, CNRS, Villeurbanne, 69622, Fr.
SO Analytica Chimica Acta (1981), 126, 23-34
CODEN: ACACAM; ISSN: 0003-2670
DT Journal
LA English

L6 ANSWER 46 OF 64 CA COPYRIGHT 2003 ACS
AB **Lactose** was attached to the 2-amino function of chitosan (I) by reductive amination (ACOH/MeOH, NaBH3CN, 6 days). The reaction product II (R1 = CH2OH) had unusual soln. properties; it was insol. in EtOH, aq. EtOH, and other org. solvents, but did not gel or ppt. when its dil. aq. solns. were mixed with acid, base, or aq. solns. of CaCl2, CrCl3, SnCl2, K2CrO4, H3BO3, or combinations thereof. **Galactose oxidase** regiospecifically oxidized II (R1 = CH2OH) to the aldehyde II (R1 = CHO).

AN 95:25449 CA
TI Formation of branched-chain, soluble polysaccharides from chitosan
AU Hall, Laurance D.; Yalpani, Mansur
CS Dep. Chem., Univ. British Columbia, Vancouver, BC, V6T 1Y6, Can.
SO Journal of the Chemical Society, Chemical Communications (1980), (23), 1153-4
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English

L6 ANSWER 47 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 22
AB The sialic acid residues of the plasma membrane glycoproteins were specifically radiolabeled by oxidn. with NaIO4 followed by redn. with NaB[3H]4. Surface-labeled glycoproteins were resolved by polyacrylamide gel electrophoresis in the presence of Na dodecyl sulfate and visualized by fluorog. The major surface-labeled glycoproteins were designated GP-240, GP-120, GP-92, GP-48, and GP-25, the numerical designation being their apparent mol. wt. .times. 10-3 estd. by polyacrylamide gel electrophoresis in the presence of Na dodecyl sulfate in 7.5% gels. These glycoproteins were not labeled by D-**galactose oxidase** /NaB[3H]4, a method that introduces a tritium label into nonreducing terminal D-galactose and (or) 2-acetamido-2-deoxy-D-galactose residues of their heterosaccharide moieties, indicating that the presentation of these monosaccharide residues was not suitable for binding of the enzyme. The radiolabeled glycoproteins were quant. solubilized in 0.5% Nonidet P-40 and subjected to affinity chromatog. on Sepharose-conjugated Ricinus communis agglutinins I or II or soybean agglutinin. Most of the radiolabeled glycoproteins were bound to the Sepharose-conjugated R. communis lectins and were eluted with **lactose**; however, no radiolabeled glycoproteins were bound to Sepharose-conjugated soybean agglutinin. After treatment of the cells with neuraminidase, GP-120 and GP-92 bound to Sepharose-conjugated soybean aggglutinin, indicating exposure of nonreducing terminal 2-acetamido-2-deoxy-D-galactose on the heterosaccharide moieties of these glycoproteins. Information regarding the surface labeling and affinity chromatog. of the plasma membrane glycoproteins allowed differentiation of 5 classes of glycoproteins exhibiting structural differences in the nonreducing termini of their heterosaccharide moieties.

AN 91:173044 CA
TI Resolution and partial characterization of the major plasma membrane sialoglycoproteins of Novikoff tumor cells
AU Glenney, John R., Jr.; Allison, James P.; Hixson, Douglas C.; Walborg, Earl F., Jr.
CS Health Sci. Cent., Univ. Texas, Houston, TX, 77025, USA
SO Journal of Biological Chemistry (1979), 254(18), 9247-53
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English

L6 ANSWER 48 OF 64 CA COPYRIGHT 2003 ACS
AB The lectinlike protein isolated from bovine spleen, bovine spleen binding protein (BSBP), bound to sialidase-treated bovine erythrocytes, but did not bind to normal erythrocytes. BSBP showed an apparent mol. wt. of 240,000 on Na dodecyl sulfate polyacrylamide gel electrophoresis; after heating at 75.degree. for 20 min, BPSP gave subunits of apparent mol. wts. of 20,000. Isoelec. focusing showed a single band with an isoelec. point of 4.8. BSBP contained 13% carbohydrate and a high proportion of glutamic acid and aspartic acid residues. Ca2+ was essential for the binding of BSBP to erythrocytes, although Mg2+ could partially replace Ca2+. BSBP lost 70% of its binding activity when held at room temp. for a few days, although 75% of its activity remained when held at -20.degree. for 2 wk. **Lactose** (0.1M) inhibited 15% of the binding of BSBP to sialidase-treated bovine erythrocyte. Intact bovine erythrocyte membrane glycoprotein showed only weak inhibitory activity on the binding of BSBP to sialidase-treated bovine erythrocytes, whereas the desialization of the glycoprotein greatly enhanced the inhibitory activity. The treatment of the asialoglycoprotein with **galactose oxidase** decreased the inhibitory activity and periodate oxidn. of the asialoglycoprotein resulted in almost complete loss of the inhibitory activity. BSBP (50 .mu.g/mL) showed mitogenic activity against human peripheral lymphocytes.
AN 92:126722 CA
TI A lectin-like substance from bovine spleen
AU Kadowaki, Shuitiroh; Osawa, Toshiaki
CS Fac. Pharm. Sci., Univ. Tokyo, Tokyo, 113, Japan
SO Japanese Journal of Experimental Medicine (1979), 49(6), 397-404
CODEN: JJEMAG; ISSN: 0021-5031
DT Journal
LA English

L6 ANSWER 49 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 23
AB Nongrowing cells of H. saccharovorum oxidized **lactose** to a product identified as lactobionic acid by thin-layer, paper, and column chromatog., and by identification of the galactose and gluconic acid produced from it after acid hydrolysis. Growing cells oxidized **lactose** to a product that was identical with lactobionate except that it did not serve as a substrate for **galactose oxidase**. Whereas the identity of this compd. was not established, it is suggested that it is lactobionic acid in which the galactose moiety is in the furanose form. Neither lactobionate nor the product produced by growing cells was further metabolized, suggesting that **lactose** oxidn. is not coupled to growth.
AN 89:143077 CA
TI The metabolism of carbohydrates by extremely halophilic bacteria: the identification of lactobionic acid as a product of lactose metabolism by Halobacterium saccharovorum
AU Tomlinson, Geraldine A.; Strohm, Maureen P.; Hochstein, Lawrence I.
CS Dep. Biol., Univ. Santa Clara, Santa Clara, CA, USA
SO Canadian Journal of Microbiology (1978), 24(8), 898-903
CODEN: CJMIAZ; ISSN: 0008-4166
DT Journal
LA English

L6 ANSWER 50 OF 64 CA COPYRIGHT 2003 ACS
AB **Lactose** (I) was first hydrolyzed with 0.2% H_2SO_4 or by using living cells of Escherichia coli 3-MT, a mutable-type mutant capable of decompg. I but not galactose (II). II in the H_2SO_4 hydrolyzate of a std. soln. of I was measured by the **galactose oxidase** -peroxidase (GOP method) or cup-plate method using M (galactose-sensitive mutant of enteric bacterium) as a test organism (M-cup method). II was measurable at 25-200 .mu.g/2 mL by the GOP method and at 1.25-10 .mu.g/0.1 mL by the M-cup method. II in the E. coli 3-MT hydrolyzate was measurable at 25-100 .mu.g/2 mL by the GOP method and at 1.25-10 .mu.g/0.1 mL by the M-cup method. Neutralization of the H_2SO_4 hydrolyzate was necessary before detn. of II and deproteinizing was required in the GOP method. The combination of E. coli 3-MT hydrolysis and the M-cup method was good for the detn. of I in the biol. materials.
AN 90:99563 CA
TI Determination of **lactose** by **galactose-oxidase** peroxidase method using mutable-type variant murase
AU Fukutome, Atsushi
CS Sch. Med., Showa Univ., Tokyo, Japan
SO Showa Igakkai Zasshi (1977), 37(5), 425-35
CODEN: SIGZAL; ISSN: 0371-0254
DT Journal
LA Japanese

L6 ANSWER 51 OF 64 CA COPYRIGHT 2003 ACS DUPLICATE 24
AB **Galactose oxidase** (I) was covalently immobilized to chem. modified porous silica particles by reaction of native I with pendant benzoyl azide groups on the carrier. I loading on the carrier was 100-150 units/mL. Immobilized I was incorporated into a hardware assembly suitable for the detn. of galactose or **lactose** concns. in complex biol. fluids. The prototype instrument as described is suitable for continuous, on-line monitoring or discrete sample anal. Reaction conditions can be readily provided which maintain global 1st order kinetics within the reactor and strict linearity of the procedure over a wide range of sample concns. Auto-inactivation of immobilized I can be prevented by $K_3Fe(CN)_6$ and long-term reactor stability can be achieved by the periodic application of the reagent to the I reactor in situ.
AN 86:52193 CA
TI Galactose oxidase: applications of the covalently immobilized enzyme in a packed bed configuration
AU Dahodwala, S. K.; Weibel, M. K.; Humphrey, A. E.
CS Dep. Biochem. Biophys., Univ. Pennsylvania, Philadelphia, PA, USA
SO Biotechnology and Bioengineering (1976), 18(12), 1679-94
CODEN: BIBIAU; ISSN: 0006-3592
DT Journal
LA English

L6 ANSWER 52 OF 64 CA COPYRIGHT 2003 ACS
AB An immobilized **galactose oxidase** (I) packed-bed reactor was developed for the detn. of galactose and **lactose** in blood serum and milk, resp. The reactor uses as buffer 0.1M Tris-SO_4 (pH 6.8) with 2 mM $CuSO_4$ to maximize I activity and stability; in add., $K_3Fe(CN)_6$ is used to activate I. I was immobilized on porous glass particles by reaction of the protein nucleophilic residues with a p-benzoylazide deriv. of the silica carrier. A detection device is used that consists of a miniature flow cell with an O electrode to measure the decrease in O from the I-catalyzed oxidns. The whole anal. system is operated under a pulse substrate introduction mode that maintains I stability best. The reactor is illustrated by the detn. of **lactose** in milk and galactose in blood serum.
AN 88:18630 CA
TI Application of immobilized enzymes to chemical analysis: galactose oxidase

AU Weibel, M. K.; Humphrey, A. E.
CS Med. Sch., Univ. Pennsylvania, Philadelphia, PA, USA
SO Natl. Sci. Found., Res. Appl. Natl. Needs, [Rep.] NSF/RA (U.S.) (1975), NSF/RA-760032, Enzyme Technol. Grantees-Users Conf.; PB-265 548, 116-23
CODEN: XNRNBT
DT Report
LA English

L6 ANSWER 53 OF 64 CA COPYRIGHT 2003 ACS
AB To milk or other catalase-contg. liq., mainly biol., are added a reagent comprising substances (.beta.-**galactose oxidase** and glucose oxidase) that release H2O2 in the presence of a substance available in the liq. (**lactose**) and another reagent (leuco dye plus peroxidase) which, upon oxidn. by H2O2, gives a color reaction, said oxidn. by H2O2 being inhibited by the presence of catalase, whereby the color reaction is stronger with a smaller catalase content of the liq. Also described is a device for performing the assay that comprises the 2 reagents sepd. phys. from each other by a space through which the generated H2O2 can diffuse and that is capable of admitting the milk or other liq. Other reagent compns. and devices are described.
AN 84:71016 CA
TI Assaying catalase in milk and other liquids
IN Rosen, Ernst A. C. G.; Rosen, Helena M.
PA Alfa-Laval AB, Swed.
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3926732	A	19751216	US 1974-442346	19740214
PRAI	SE 1973-22014		19730216		

L6 ANSWER 54 OF 64 CA COPYRIGHT 2003 ACS
AB Unavailable
AN 84:40251 CA
TI Galactose oxidase. Kinetic properties, immobilization, and application in analysis
AU Dahodwala, Samun K.
CS Univ. Pennsylvania, Philadelphia, PA, USA
SO (1974) 267 pp. Avail.: Xerox Univ. Microfilms, Ann Arbor, Mich., Order No. 75-24,057
From: Diss. Abstr. Int. B 1975, 36(5), 2368
DT Dissertation
LA English

L6 ANSWER 55 OF 64 CA COPYRIGHT 2003 ACS
AB Galactosyl-6-[3H] glucosyl ceramide was prepd. by the sequential action of **galactose oxidase** and Na borohydride-[3H] redn. A water-sol. radioactive contaminant appeared after a 2 month storage at -4.degree.. This was identified as **lactose**-[3H] by both chromatog. and carrier diln. techniques.
AN 79:2449 CA
TI Radiochemical decomposition of galactosyl-6-[3H]-ceramide
AU Mumford, Richard A.; Raghavan, Srinivasa S.; Rhoads, David B.; Kanfer, Julian N.
CS Eunice K. Shriver Cent., W. E. Fernald State Sch., Waltham, MA, USA
SO Lipids (1973), 8(4), 238-40
CODEN: LPDSAP; ISSN: 0024-4201
DT Journal
LA English

L6 ANSWER 56 OF 64 CA COPYRIGHT 2003 ACS

AB Type XIV pneumococcus specific capsular polysaccharide, SXIV, is made of a main chain of D-galactose and N-acetylglucosamine and three types of side chain residues: one consists of D-glucose and the other two consist one of .alpha. D-galactose and the other of **lactose**, contg. .beta. galactose in the terminal end. Under certain conditions, D-**galactose oxidase** can attack 1 or 2 of these terminal galactoses, oxidizing the hydroxy groups in position six to aldehdes. Further oxidn. to carboxyl groups can be obtained by treatment with NaClO2 in acidic conditions. By variations of these procedures 3 different derivs. of SXIV can be obtained which ppt. different amts. of antibody from an anti-SXIV horse serum: SXIV untreated, ppts. 650 .mu.g of antibody N/ml; SXIV withone galactose oxidized to aldehyde ppts. 641 .mu.g; SXIV with 2 galactoses oxidized to aldehydes ppts. 603 .mu.g; SXIV with 2 galactoses converted to galacturonic acid ppts. 500 .mu.g, and SXIV oxidized with periodate ppts. 274 .mu.g. SXIV with 2 terminal galacturonic acid residues ppts. also in antipneumococcus Type I horse serum. The internal galactoses in the main chain are not attacked by the enzyme. The aldehyde groups can be reduced to alc. again with NaBH4 without loss of immunol. specificity with respect to untreated SXIV.
AN 77:150432 CA
TI Immunochemistry of type XIV pneumococcus capsular polysaccharide oxidized by D-galactose oxidase
AU Estrada-Parra, Sergio; Gomez, Irma
CS Esc. Nac. Cienc. Biol., Inst. Politec. Nac., Mexico D. F., Mex.
SO Immunochemistry (1972), 9(11), 1095-101
CODEN: IMCHAZ; ISSN: 0019-2791
DT Journal
LA English

L6 ANSWER 57 OF 64 CA COPYRIGHT 2003 ACS
AB Ga-**lactose** oxidase from Polyporus circinatus oxidized dihydroxyacetone much more rapidly than galactose and had a Km value for dihydroxyacetone that was 1/10 that for galactose. At substrate satn. concns., the initial velocity of dihydroxyacetone oxidn . by the enzyme, as measured by O uptake, was 5-fold greater than that of galactose. The enzymic oxidn. of both dihydroxyacetone and galactose was abolished by 2mM hydroxylamine or 2.5mM cyanide. Thus, dihydroxyacetone is a better substrate for **galactose oxidase** than is galactose.
AN 72:39228 CA
TI New substrate for galactose oxidase
AU Zancan, Glaci T.; Amaral, D.
CS Inst. Bioquim., Univ. Fed. Parana, Curitiba, Brazil
SO Biochimica et Biophysica Acta (1970), 198(1), 146-7
CODEN: BBACAQ; ISSN: 0006-3002
DT Journal
LA English

L6 ANSWER 58 OF 64 CA COPYRIGHT 2003 ACS
AB A com. test paper is available which can be used in screening tests for galactose (I) in urine. In this **galactose oxidase** test paper, the inhibitors are removed by adsorption before the sample reaches the color reagent [contg. **galactose oxidase** (EC 1.1.3.9), o-tolidine, and peroxidase]. The test paper has a high sensitivity for I, but does not react with glucose, **lactose**, or galactitol.
AN 70:34948 CA
TI Test paper for galactose in urine
AU Dahlqvist, Arne
CS Univ. Lund, Lund, Swed.
SO Scandinavian Journal of Clinical and Laboratory Investigation (1968), 22(2), 87-93
CODEN: SJCLAY; ISSN: 0036-5513
DT Journal
LA English

L6 ANSWER 59 OF 64 CA COPYRIGHT 2003 ACS
AB The fermentation broth for the production of **galactose oxidase** contains, among other substances, phosphate, Mg and Mn salts, yeast ext., and carbohydrate, which can be either glucose or galactose. A 24-48-hr. culture is freed from mycelium (Dactylium dendroides) and purified by chromatog. A sp. activity of 350-500 units/.mu.g. of protein has been achieved. The stability of the ready-made reagent increases with increasing purity of the enzyme. The compn. decided upon (selected from a study of 10 different buffer systems) enables the freeze-dried reagent to be stored at 5.degree. for at least 12 months without any demonstrable redn. in activity or usability. In galactose prepns. for i.v. use, it was considered necessary to decrease the content of foreign carbohydrates (**lactose** and glucose) by recrystn.
AN 66:64346 CA
TI Development of galactose oxidase reagent and galactose infusion solution as commercial products
AU Lunden, R.; Westlund, L.; Florell, C.
CS Res. Dep., AB KABI, Stockholm, Swed.
SO Scandinavian Journal of Clinical and Laboratory Investigation, Supplement (1966), 18(92), 114-17
CODEN: SCLSAH; ISSN: 0085-591X
DT Journal
LA English

L6 ANSWER 60 OF 64 CA COPYRIGHT 2003 ACS
AB An improved process was described for **galactose oxidase** production by Polyporus circinatus which involved a culture medium contg. an org. N source such as protein, its hydrolyzate, or amino acids, and a C source such as galactose, **lactose**, glucose, or starch. Cultivation at 23-30.degree., pH 6.3-8 for 72-120 hrs. and addn. of lipid provided good results.
AN 62:54895 CA
OREF 62:9744a
TI Galactose oxidase production
IN Rupe, Chauncey O.
PA Miles Laboratories, Inc.
SO 17 pp.
DT Patent
LA Unavailable
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 639019		19640217	BE	
	FR 1372317			FR	
	GB 1001173			GB	
	NL 299556			NL	
	US 3186919		1965	US	
	US 3186921		1965	US	
PRAI	US		19621022		

L6 ANSWER 61 OF 64 CA COPYRIGHT 2003 ACS
AB The estn. of galactose (I) in plasma by the enzyme system **galactose oxidase**-peroxidase was investigated. The method was relatively specific for I, although xylose and ascorbic acid reacted to a slight degree with the enzyme; **lactose** also reacted, probably because partial hydrolysis of the disaccharide released I. The relation between absorbance and concn. of I >20 mg./100 ml. was linear.
AN 62:23834 CA
OREF 62:4317b-c
TI Estimation of galactose in plasma using galactose oxidase
AU Ford, J. D.; Haworth, J. C.

CS Children's Hosp., Winnipeg, Can.
SO Clin. Chem. (1964), 10(11), 1002-6
DT Journal
LA Unavailable

L6 ANSWER 62 OF 64 CA COPYRIGHT 2003 ACS
AB P. circinatus produces an oxidase that catalyzes the oxidn, of D-galactose by mol. O to produce D-galacto-hexodialdose and H2O2. The enzyme was purified about 35-fold from the growth medium. It is a homogeneous protein in gradient electrophoresis. In addn. to galactose and galactosamine, a no. of galactosides and oligosaccharides or polysaceharides which contain galactose are oxidized. The reaction is more rapid with polymers contg, galactose; the tetrasaceharide stachyose is most rapidly oxidized, and the galactomannan guran shows the highest affinity. The enzyme catalyzes oxidn. of galactose and galactosides at the C-6 position. This has been established by oxidn. of the enzyme product with Br, which results in the formation of mucic acid from D-galacto-hexodialdose and D-galacturonides from the galactosides. The enzyme can be employed for the detn. of galactose.
AN 57:64467 CA
OREF 57:12876i,12877a-b
TI The D-galactose oxidase of Polyporus circinatus
AU Avigad, Gad; Amaral, D.; Bretones, C. Asensio; Horecker, L.
CS New York Univ. School of Med., New York
SO Journal of Biological Chemistry (1962), 237, 2736-43
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA Unavailable

L6 ANSWER 63 OF 64 CA COPYRIGHT 2003 ACS
AB **Galactose oxidase** (I) in the presence of O catalyzes the oxdn. of C-6 of D-galactose (II), yielding an aldehyde and H2O2. Filter paper strips were dipped in a 1.5% soln. of o-toluidine in MeOH and then dried in the dark under a stream of cool, dry air. One end of these strips was then dipped in a soln. contg. I, horseradish peroxidase, and Carbowax 6000 dissolved in 1M, pH 6.2, Na phthalate buffer. The test papers are stable for several months, and exhibit a deep blue-green color in 10 min. with solns, contg. as little as 0.01% free .alpha.-II or II-contg. sugars such as floridoside, melibiose, galactinol, raffinose, stachyose, and **lactose**. F-, Cl-, and ascorbic acid interfere and are removed from samples by ion-exchange chromatography. The prepn. of crude freeze-dried I from the growth medium of Polyporus circinatus is described.
AN 57:18083 CA
OREF 57:3734h-i,3735a
TI A test paper for the detection of galactose and certain galactose-containing sugars
AU Rorem, Edward S.; Lewis, J. C.
CS Western Regional Lab., Albany, CA
SO Analytical Biochemistry (1962), 3, 230-5
CODEN: ANBCA2; ISSN: 0003-2697
DT Journal
LA Unavailable

L6 ANSWER 64 OF 64 CA COPYRIGHT 2003 ACS
AB **Galactose oxidase** (I) from the wood mold P. circinatus oxidizes the C6 of galactose to form galactose dialdehyde. Purified I is active on galactose derivs. with a free OH in the 6 position. Activity measured colorimetrically with peroxidase and o-dianisidine gave the following relative activities on varying substrates: D-galactose, 100; 2-deoxy-D-galactose, 32; N-acetyl-D-galactose, 92; dulcitol, 0.02; D-glucose, 0.000001; .alpha.-methyl-D-galactoside, 125; .beta.-methyl-D-galactoside, 340; .beta.-methylthio-D-galactoside, 91; **lactose**, 2; melibiose, 80; melibiotol, 70; raffinose, 180;

stachyose, 610; galactose 1-phosphate, 9; D-fucose, 0.0001; L-arabinose, 0.0001; D-galactonic acid, 0.001; and D-galacturonic acid, 0.0001.

AN 56:3539 CA
OREF 56:705h-i
TI Galactodialdose production with an enzyme from the mold Polyporus circinatus
AU Avigad, G.; Bretones, C. Asensio; Amaral, D.; Horecker, B. L.
CS New York Univ., New York
SO Biochemical and Biophysical Research Communications (1961), 4, 474-7
CODEN: BBRCA9; ISSN: 0006-291X
DT Journal
LA Unavailable

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L2          3406 S GALACTOSE OXIDASE
L3            96 S L1 (P) L2
L4         73362 S LACTOSE
L5            96 S LACTOSE (P) (GALACTOSE OXIDASE)
L6            64 DUP REM L5 (32 DUPLICATES REMOVED)

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     (FILE 'HOME' ENTERED AT 14:48:20 ON 11 JUN 2003)

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